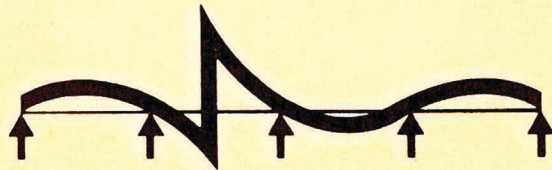


MOMENTS SHEARS and REACTIONS

FOR CONTINUOUS HIGHWAY BRIDGES



AMERICAN INSTITUTE OF STEEL CONSTRUCTION, INC.

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Foreword

ENGINEERING considerations frequently lead to the adoption of continuous structures as the most efficient solution of a design problem, but analysis of such structures often becomes considerably more time-consuming than that of simple structures. This is particularly true in the case of highway bridge spans of lengths such that **TRUCK** rather than **LANE** live loading governs the design. The tables contained herein were prepared to assist the designer of continuous beams and girders in general, and continuous highway beam bridges in particular, by reducing the time required for analysis.

Preface to the Second Revised Printing

Although this booklet was first printed in 1959, it still provides useful information, especially for checking the results of computer-aided analysis. The text was revised to refer to the provisions of the 1983 AASHTO Specification. The example of a cover-plated beam was removed. Continuous beams can now be designed without cover plates in accordance with the 1986 AASHTO *Guide Specification for Alternate Load Factor Design Procedures for Steel Beam Bridges Using Braced Compact Sections*.

June 1986

American Institute of Steel Construction

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Continuous Highway Bridge Tables

IN Tables 2.0 to 4.7, inclusive, maximum moments, shears and reactions are given for the 456 continuous highway bridge spans shown in Table 1. The span lengths included encompass the full range of beam and usual plate girder bridges.

All of the 3 and 4 span structures are symmetrical about their center line. Interior spans are equal to or greater than the corresponding exterior spans, the ratio of interior to exterior span length being designated as N .

Intervals between successive span lengths and values of N are small enough to permit linear interpolation without significant error.

Design Load

The moments, shears and reactions tabulated are those produced by one lane of AASHO HS20-44 live loading. They correspond to the values given for simple spans on page 273 of the 1961 AASHO Standard Specifications for Highway Bridges. Values are determined by standard **TRUCK** loading (one H-S truck) except those below the heavy horizontal lines in some columns, which are governed by standard **LANE** loading.

That proportion of the moments, shears and reactions given in Tables 2.0 to 4.7 for which individual beams and their supports are to be designed, is governed by the provisions of the 1961 AASHO Specification, Sect. 1.3.1. For the proportioning of moments, the applicable fraction given in paragraph (b) of that section will govern. Note that these fractions apply to **WHEEL** loads rather than **AXLE** loads; hence, the values listed in Tables 2.0 to 4.7 should be multiplied by one-half of the given fraction.

To compute reactions, and shears at reaction points, pursuant with the provisions of paragraph

(a), for longitudinal beams when **TRUCK** loading governs, multiply the values given in Tables 2.0 to 4.7 by one-half the applicable fraction given in paragraph (b) and add, for the effect of the axle load adjacent to the support, the value P , computed as follows:

When S , the average longitudinal beam spacing in feet, is less than 6 ft.,

$$P = 16\left(2 - \frac{4}{S} - Q\right)^*$$

When S is greater than 6 ft.,

$$P = 16\left(3 - \frac{10}{S} - Q\right)^*$$

Q being the applicable fraction as given in 1.3.1 (b) and P being expressed in kips.

Impact coefficients I, II, III, IV and V are computed from the formula given in Sect. 1.2.12 of the 1961 AASHO Specification. The computed live load moments, shears and reactions are multiplied by the appropriate coefficients (indicated at the bottom of the columns in Tables 2.0 to 4.7 to which they apply) to obtain the allowance for impact loading.

Coefficients for computing moments, shears and reactions produced by uniform dead load w , distributed over the entire length of the structure, are given at the foot of Tables 2.0 to 4.7. **Note that the value for L to be used in computing dead load values in all cases is that for the shorter spans.**

All values given in Tables 2.0 to 4.7 were determined on the basis of a constant moment of inertia throughout the entire length of the structure.

* Disregard this term when computed P is negative.

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CONTINUOUS HIGHWAY BRIDGE TABLES

TABLE SHOWING SPAN LENGTHS USED AS BASIS FOR IMPACT COEFFICIENTS
(See 1961 AASHO Specification, Sect. 1.2. 12)

| Impact Coeffic. | 2 Continuous Spans | | 3 Continuous Spans | | 4 Continuous Spans | |
|-----------------|--------------------|---------------------------------------|--------------------|---------------------------------------|--------------------|---------------------------------------|
| I | | R_A V_{AB}, V_{BA} M_{AB} | | R_A V_{AB}, V_{BA} M_{AB} | | R_A V_{AB}, V_{BA} M_{AB} |
| II | | M_B | | M_B | | M_B |
| III | | R_C V_{BC}, V_{CB} M_{BC} | | V_{BC} M_{BC} | | V_{BC}, V_{CB} M_{BC} |
| | | | | | | M_C |
| IV | | R_B | | R_B | | R_B |
| V | | | | | | R_C |

* Indicates that the "length" is the computed average of adjacent loaded spans

Effect of Variable Moment of Inertia

In highway spans, when the total negative moment at the interior supports of continuous beams is greater than the total positive moment, maximum economy may sometimes be achieved by adding partial length cover plates to the rolled beam to assist in resisting the negative moment. On longer spans, where splices will be required anyway, the use of heavier rolled shapes in the region of interior supports may prove desirable. An increase in moment of inertia in the vicinity of the interior supports produces an increase in the maximum negative moments and interior reactions.

For a uniformly loaded continuous beam of two

equal spans, cover plated for one-fourth of the span length each side of the interior support to produce a 50% increase in moment of inertia, the increase in negative moment is approximately 5%. But this is not a linear relationship and the increase in negative moment rapidly becomes more pronounced for greater increases in moment of inertia. However, the need for a moment of inertia increase larger than 50% is not commonly encountered in highway continuous beam design.

On this basis it will be found that the tables can be used directly, with negligible error, for all beams of relatively constant moment of inertia. They also will be useful in arriving at a "first approximation" in designs where greater variation in moment of inertia are encountered.

Illustrative Problem # 1Req'd $S = 433 \text{ in.}^3$

Design longitudinal beams supporting concrete deck, spaced 6'-6" o.c. and continuous over two 57' spans. Dead load 750 lbs. per lin. ft; live load HS20. Also determine support reactions.

$$Q = \frac{6.5}{5.5} = 1.18 \quad (\text{See AASHO Spec., Sect. 1.3.1. (b)})$$

Refer to Table 2.0

Live load moment per beam = tabular value $\times Q/2$.

Live load reaction per beam = tabular value $\times Q/2$, plus $16(3 - \frac{10}{6.5} - 1.18) = \text{tabular value} \times 0.59$ plus 4.5^k

For moments, and reaction at exterior supports, impact coefficient $I = \frac{50}{57 + 125} = 0.275$

For reaction at interior supports, impact coefficient $IV = \frac{50}{114 + 125} = 0.209$

Max. positive moment

$$M_D = 0.0703 \times 0.75 \times 57^2 = 171^k'$$

$$\text{For 60' span, } M_L = 645.5 \times 0.59 = 381$$

$$\text{For 55' span, } M_L = 572.9 \times 0.59 = 338$$

$$\text{Difference} = 43$$

$$\text{For 57' span, } M_L = 338 + \frac{2}{5} \times 43 = 355$$

$$M_I = 0.275 \times 355 = 98$$

$$M_T = 624^k' (*)$$

$$\text{Req'd } S = \frac{624^k' \times 12}{18 \text{ ksi}} = 416 \text{ in.}^3$$

$$\underline{33 \text{ WF } 141} \\ (S = 446.8 \text{ in.}^3)$$

Max. negative moment

$$M_D = 0.125 \times 0.75 \times 57^2 = 305^k'$$

$$\text{For 60' span, } M_L = 495.8 \times 0.59 = 293$$

$$\text{For 55' span, } M_L = 432.5 \times 0.59 = 255$$

$$\text{Difference} = 38$$

$$\text{For 57' span, } M_L = 255 + \frac{2}{5} \times 38 = 270$$

$$M_I = 0.275 \times 270 = 74$$

$$M_T = 649^k'$$

Max. Reactions

$$\text{At A, } R_D = 0.375 \times 0.75 \times 57 = 16.1^k$$

$$R_L = 0.59[57.1 + (\frac{2}{5} \times 1.2)] + 4.5^k = 38.5$$

$$R_I = 0.275 \times 38.5 = 10.6$$

$$R_A = 65.2^k$$

$$\text{At B, } R_D = 1.25 \times 0.75 \times 57 = 53.4^k$$

$$R_L = 0.59[70.0 + (\frac{2}{5} \times 4.0)] + 4.5^k = 46.7$$

$$R_I = 0.209 \times 46.7 = 9.8$$

$$R_B = 109.9^k$$

Illustrative Problem # 2

Design longitudinal beams supporting concrete deck, spaced 6'-6" o.c. and continuous over 3 spans. (75' + 90' + 75' = 240') Dead load 900 lbs. per lin. ft; live load HS20 loading.

Live load per beam: $0.59 \times (\text{H-S})$ loading.

$$N = \frac{90}{75} = 1.2$$

Refer to Table No. 3.2

Max. positive moments

$$\text{For 75' span, } M_D = 0.0715 \times 0.9 \times 75^2 = 362^k'$$

$$M_L = 868.5 \times 0.59 = 512$$

$$M_I = 512 \times 0.250 = 128$$

$$\underline{1002^k'}$$

Req'd $S = 668 \text{ in.}^3$

$$\text{For 90' span, } M_D = 0.0582 \times 0.9 \times 75^2 = 295^k'$$

$$M_L = 848.7 \times 0.59 = 501$$

$$M_I = 501 \times 0.233 = 117$$

$$\underline{913^k'}$$

Req'd $S = 609 \text{ in.}^3$ **Max. negative moment**

$$M_D = 0.1218 \times 0.9 \times 75^2 = 617^k'$$

$$M_L = 766.1 \times 0.59 = 452$$

$$M_I = 452 \times 0.241 = 109$$

$$\underline{1178^k'}$$

Req'd $S = 785 \text{ in.}^3$

Try 36 WF 230 at supports

$$(S = 835.5 \text{ in.}^3; I = 14,990 \text{ in.}^4)$$

36 WF 194 elsewhere

$$(S = 663.6 \text{ in.}^3; I = 12,100 \text{ in.}^4)$$

* Since the maximum values for M_D and M_L do not occur at same point the maximum combined $M_D + M_L$ is negligibly less than indicated by the sum of the separate values.

Referring to the moments computed above on the basis of a constant moment of inertia, the 36 WF 194 would appear to be overstressed about 1 per cent by the positive moment in the 75 ft. span. However, use of the stiffer 36 WF 230 over the supports will reduce this moment by more than the necessary amount.

Illustrative Problem # 3

Locate intermediate piers for 4-span continuous 360' beam bridge so as to require only one size of rolled beam (with cover plates at interior supports). Beams 6'-6" o.c. support concrete deck. Live load HS15 dead load 800 lbs. per lin. ft. of beam.

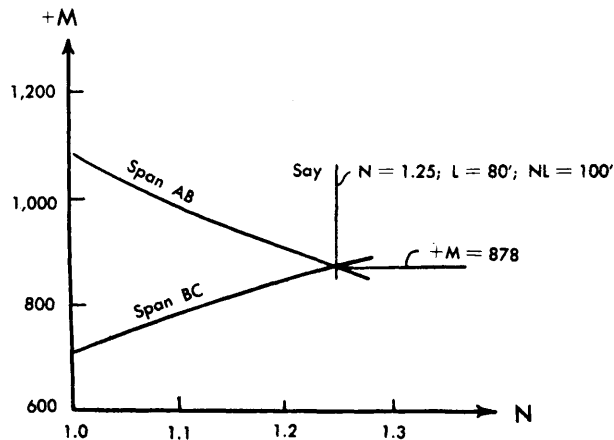
$$\begin{aligned} \text{Live load moments per beam} &= 0.75 \times 0.59 \\ &\quad \times \text{tabular values.} \\ &= 0.443 \times \text{tabular values.} \end{aligned}$$

Span AB

| N | 1.0 | 1.1 | 1.2 | 1.3 |
|---------|------|-----|-----|-----|
| $M_D =$ | 500 | 438 | 381 | 331 |
| $M_L =$ | 474 | 451 | 429 | 410 |
| $M_I =$ | 110 | 107 | 104 | 101 |
| | 1084 | 996 | 914 | 842 |

Span BC

| | | | | |
|---------|-----|-----|-----|-----|
| $M_D =$ | 236 | 278 | 317 | 356 |
| $M_L =$ | 385 | 404 | 421 | 436 |
| $M_I =$ | 90 | 92 | 94 | 96 |
| | 711 | 774 | 832 | 888 |



$$\text{Req'd } S = \frac{878 \times 12}{18} = 585 \text{ in.}^3$$

Use 36 WF 182

$$(S = 621.2 \text{ in.}^3)$$

At Support B

When $N = 1.25$,

$$M_D = \frac{0.1226 + 0.1328}{2} \times 0.8 \times 80^2 = 654 \text{ k'}$$

$$M_L = \frac{906 + 911}{2} \times 0.443 = 402$$

$$M_I = 0.233 \times 402 = \frac{94}{1150 \text{ k'}}$$

Add about 5%; say $M_T = 1210 \text{ k'}$

Req'd $S = 807 \text{ in.}^3$

$$\left. \begin{array}{l} \text{2-cov. Pls. } 10 \times \frac{5}{8} \\ \text{36 WF 182} \end{array} \right\} S = 828 \text{ in.}^3$$

Neg. mom. over less than $\frac{1}{4}$ of span L_1 —(over less than 20')

Req'd theoretical length of cov. pl. less than

$$\frac{807 - 621}{807} \times 20', \text{ say } 4.5'$$

Req'd theoretical length in 100' span = $4.5N$, say 5.5'

At Support C

$$M_D = \frac{0.1187 + 0.1448}{2} \times 0.8 \times 80^2 = 675 \text{ k'}$$

$$M_L = \frac{949 + 1001}{2} \times 0.443 = 432$$

$$M_I = \frac{0.224 + 0.221}{2} \times 432 = \frac{96}{1203 \text{ k'}}$$

Add about 5%; say $M_T = 1265 \text{ k'}$

Req'd $S = 843 \text{ in.}^3$

$$\left. \begin{array}{l} \text{2-cov. Pls. } 10 \times \frac{3}{4} \\ \text{36 WF 182} \end{array} \right\} S = 869 \text{ in.}^3$$

Req'd theoretical length of covers pls. each side of pier C

$$\text{less than } \frac{843 - 621}{843} \times 25', \text{ say } 6.5'$$

Economy Through Continuity

While it would require many more than three examples to obtain an accurate picture of the economies made possible through the use of continuous beam bridges the following tabulation is a step in this direction. Comparisons are between the solutions given for the foregoing illustrative examples and solutions using a similar number of equal simple spans.

| Description | Prob. #1-114' Crossing | | Prob. #2-240' Crossing | | Prob. #3-360' Crossing | |
|-------------------------------|------------------------|--------------------|------------------------|--------------------|------------------------|--------------------|
| | Continuous Spans | 2-57' Simple Spans | Continuous Spans | 3-80' Simple Spans | Continuous Spans | 4-90' Simple Spans |
| | 33 WF 141 | 36 WF 170 | 36 WF 194 & 36 WF 230 | 36 WF 280 | 36 WF 190 + cov. Pls. | 36 WF 280 |
| Wgt.-one line of beams-lbs. | 16,070 | 19,380 | 48,940 | 67,200 | 68,520 | 100,800 |
| Wgt. saving due to continuity | 17% | | 27% | | 32% | |
| Req'd No. of shoes | 3 | 4 | 4 | 6 | 5 | 8 |
| Req'd No. of dams | 2 | 4 | 2 | 6 | 2 | 8 |
| Req'd No. of field splices | 1 | 0 | 2 | 0 | 3 | 0 |

Problems Involving Special Loading; Influence Line Coefficients

FOR the solution of problems involving loading patterns other than those normally specified for highway bridges, Tables A2.0 to A4.7 will be found helpful. Symmetrical two, three and four-span structures having the same short-to-long span length ratios as those included in Tables 2.0 to 4.7 are covered by these tables, the numbering of which is identical with that of the former, with the prefix A added.

Given in these tables are coefficients by means of which the moment (positive or negative) at any interior support or at any tenth point along all spans, produced by a unit load P placed at the same or any other tenth point in the spans, can be computed. In order to list all possible values of these coefficients a horizontal tabulation is given opposite all support and tenth points for all spans. However, due to the symmetry of the struc-

tures, all moment values can be tabulated in a lesser number of vertical columns.

Values given along any one horizontal line are ordinates to the bending moment diagram produced by a unit load placed at the load point, shown at the left of the table, opposite which they are tabulated, considering the length of the shorter span as equal to unity and that of the longer spans as equal to N . Taken vertically, the values in any one column are ordinates to the influence line for the point under which they are tabulated.

Values shown in the heavily outlined frames are the largest possible at the point on the continuous beam under which they are tabulated and are produced when the load P is placed at this point. Hence, these values are ordinates to an envelope of the maximum positive moments produced by a single moving concentrated load.

The lowest line in Tables A2.0 to A4.7, designated "Total Area," gives ordinates to the moment diagram produced by a load, uniformly distributed along the entire structure and having a value of unity per unit of shorter span length. The two lines immediately above give, respectively, the largest positive and negative moments produced by partial distribution of the unit uniform load w .

Also included in Tables A2.0 to A4.7 are influence coefficients for all reactions, and shears adjacent to these reactions.

The following rules for use of these tables are summarized:

1. **Reactions and Shears Due to Concentrated Load**—Multiply the tabulated coefficient by the weight of the concentrated load.
2. **Reactions and Shears Due to Uniform Load**—Multiply the tabulated coefficient by the product of the weight per unit length of the uniform load and the length of the SHORTER span.
3. **Moments Due to Concentrated Load**—Multiply the tabulated moment coefficient by the product of the weight of the concentrated load and the length of the SHORTER span.
4. **Moments Due to Uniform Load**—Multiply the tabulated moment area coefficient by the product of the weight per unit length of the uniform load and the square of the length of the SHORTER span.

Special Load Points

In addition to those given at the tenth points of each span, moment and reaction coefficients are listed in Tables 2S, 3S and 4S for certain special load points.

Two of these points, which occur between the four-tenths and five-tenths points of the shorter spans, locate, respectively, the maximum positive moments in that span produced by a single concentrated load and by partial uniform loading. The maximum moment produced by the single concentrated load occurs at the special point nearer the exterior support.

Another special point is located in all cases in the shorter span, $0.5774 L$ from the exterior support. A load at this point produces the maximum negative moment at the first interior support due to a concentrated load in the shorter span.

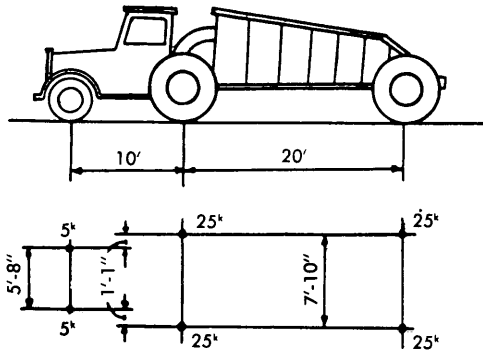
Other special points include those in the longer spans at which a concentrated load will produce the maximum negative moment at the interior supports. One such point falls between the three-tenths and four-tenths points of the longer span for the three-span and four-span structures. A load at this point yields the maximum moment value at the first interior support produced by a concentrated load placed anywhere in the longer spans. It also produces the maximum negative exterior reaction and the maximum negative moment at all points in unloaded shorter spans. The maximum negative moment at the second interior support of four-span structures is produced by a load near the six-tenths point of the longer spans.

A special point, which applies to the three- and four-span structures only, occurs less than one-tenth of the span length from the first interior support. It is one at which a single concentrated load will produce the largest reaction at this support. For two equal spans and for the second interior support of four-span structures the maximum interior reaction will occur with the concentrated load directly over the interior support.

These special points are tabulated for the purpose of locating precisely the peaks of the various influence lines, to facilitate the positioning of loads for absolute maximum effect and to minimize the possibility of introducing excessive errors in interpolating the table due to truncation of the peaks.

Illustrative Problem # 4

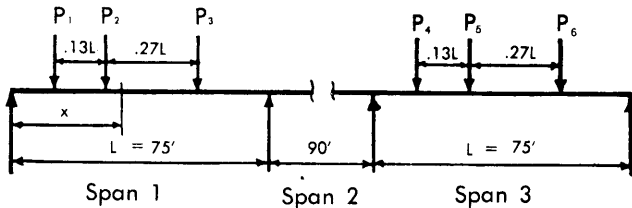
Investigate stresses in 75'-90'-75' continuous bridge designed in Problem #2 using earth moving truck loading shown below.



Consider moments produced by one moving truck with impact and also trucks standing in more than one span, without impact.

Refer to Table A3.2

Max. positive moments



75' spans loaded as per sketch*

$$P_1 = P_4 = \frac{5.42'}{6.50'} \times 5^k = 4^k$$

$$P_2 = P_3 = P_5 = P_6 = 25^k$$

$$\frac{20'}{75'} = 0.27$$

Truck in Span 1:

Infl. Coeff. *Load* M_x/L

When $x = 0.3L$, with

$$P_1 @ 0.17L, \text{ Span 1, } 0.1069 \times 4^k = 0.43^k$$

$$P_2 @ 0.30L, \text{ Span 1, } 0.1899 \times 25 = 4.75$$

$$P_3 @ 0.57L, \text{ Span 1, } 0.1009 \times 25 = 2.52$$

$$\underline{\underline{7.70^k}}$$

When $x = 0.4L$, with

$$P_1 @ 0.27L, \text{ Span 1, } 0.1376 \times 4^k = 0.55^k$$

$$P_2 @ 0.40L, \text{ Span 1, } 0.2070 \times 25 = 5.18$$

$$P_3 @ 0.67L, \text{ Span 1, } 0.0961 \times 25 = 2.40$$

$$\underline{\underline{8.13^k}}$$

When $x = 0.5L$, with

$$P_1 @ 0.37L, \text{ Span 1, } 0.1461 \times 4^k = 0.58^k$$

$$P_2 @ 0.50L, \text{ Span 1, } 0.2040 \times 25 = 5.10$$

$$P_3 @ 0.77L, \text{ Span 1, } 0.0771 \times 25 = 1.93$$

$$\underline{\underline{7.61^k}}$$

Truck in Span 3:

Infl. Coeff. *Load* M_x/L

When $x = 0.4L^\dagger$, with

$$P_4 @ 0.07L, \text{ Span 3, } 0.0032 \times 4^k = 0.01^k$$

$$P_5 @ 0.20L, \text{ Span 3, } 0.0077 \times 25 = 0.19$$

$$P_6 @ 0.47L, \text{ Span 3, } 0.0101 \times 25 = 0.25$$

$$\underline{\underline{0.45^k}}$$

$$P_4 @ 0.17L, \text{ Span 3, } 0.0068 \times 4^k = 0.03^k$$

$$P_5 @ 0.30L, \text{ Span 3, } 0.0096 \times 25 = 0.24$$

$$P_6 @ 0.57L, \text{ Span 3, } 0.0093 \times 25 = 0.23$$

$$\underline{\underline{0.50^k}}$$

$$P_4 @ 0.27L, \text{ Span 3, } 0.0091 \times 4^k = 0.04^k$$

$$P_5 @ 0.40L, \text{ Span 3, } 0.0103 \times 25 = 0.26$$

$$P_6 @ 0.67L, \text{ Span 3, } 0.0078 \times 25 = 0.20$$

$$\underline{\underline{0.50^k}}$$

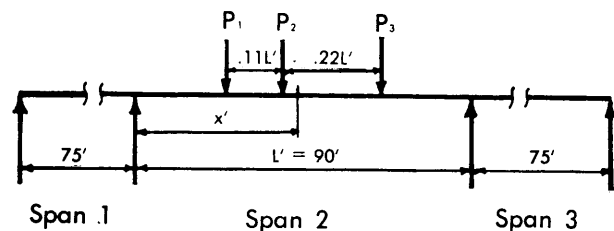
$$P_4 @ 0.37L, \text{ Span 3, } 0.0101 \times 4^k = 0.04^k$$

$$P_5 @ 0.50L, \text{ Span 3, } 0.0100 \times 25 = 0.25$$

$$P_6 @ 0.77L, \text{ Span 3, } 0.0058 \times 25 = 0.15$$

$$\underline{\underline{0.44^k}}$$

Maximum positive moment in Span 1 produced with P_2 at 0.4 point of Span 1 and P_6 between 0.3 and 0.4 points of Span 3.



90' span loaded as per sketch.

$$P_1 = 4^k; P_2 = P_3 = 25^k$$

$$\frac{20'}{90'} = 0.22$$

Infl. Coeff. *Load* M_x/L

When $x' = 0.4L'$, with

$$P_1 @ 0.29L', 0.1259 \times 4^k = 0.50^k$$

$$P_2 @ 0.40L', 0.1933 \times 25 = 4.83$$

$$P_3 @ 0.62L', 0.0946 \times 25 = 2.37$$

$$\underline{\underline{7.70^k}}$$

* A complete investigation would reveal that the maximum positive moment in Span 1 is produced when the trucks are headed towards the left.

† Position of truck in Span 3, producing largest positive moments in Span 1, same for all points in Span 1.

When $x' = 0.5L'$, with

$$P_1 @ 0.39L', 0.1426 \times 4^k = 0.57^k$$

$$P_2 @ 0.50L', 0.2036 \times 25 = 5.09$$

$$P_3 @ 0.72L', 0.0909 \times 25 = 2.27$$

$$\underline{7.93^k} \blacktriangleleft$$

When $x' = 0.6L'$, with

$$P_1 @ 0.49L', 0.1394 \times 4^k = 0.56^k$$

$$P_2 @ 0.60L', 0.1933 \times 25 = 4.83$$

$$P_3 @ 0.82L', 0.0692 \times 25 = 1.73$$

$$\underline{7.12^k}$$

For trucks standing in Spans 1 and 3, no impact:

$$M_x L = 8.13 + 0.50 = 8.63^k$$

For 1 moving truck in Span 2, including impact:

$$M_x L = 7.93 \times 1.233 = 9.78^k$$

For 1 moving truck in Span 1, including impact:

$$M_x L = 8.13 \times 1.25 = 10.16^k$$

$$\text{Critical } M_{L+I} = 10.16^k \times 75' = 762^{k'}$$

$$M_D \text{ (See Prob. \#2)} = \frac{294}{1056^{k'}}$$

$$f_b = \frac{1056 \times 12}{663.6} = 19.1 \text{ ksi}$$

Max. negative moment

A complete investigation would disclose that the negative moments at the interior supports, produced by a truck in Span 2, are not significantly different regardless of the orientation of this truck. Such is not the case in considering the effect of a second truck in one of the shorter spans. The negative moment at support *B* would have its maximum value only if a truck placed in Span 1 were headed towards the right. This same maximum value, of course, would be produced at support *C* with a truck in Span 3 headed towards the left.

M/L at *C*, due to truck in Span 2, when:

$$P_1 @ 0.29L', 0.0599 \times 4^k = 0.24^k$$

$$P_2 @ 0.40L', 0.0818 \times 25 = 2.05$$

$$P_3 @ 0.62L', 0.1027 \times 25 = 2.57$$

$$\underline{4.86^k}$$

$$P_1 @ 0.39L', 0.0798 \times 4^k = 0.32^k$$

$$P_2 @ 0.50L', 0.0964 \times 25 = 2.41$$

$$P_3 @ 0.72L', 0.0966 \times 25 = 2.42$$

$$\underline{5.15^k} \blacktriangleleft$$

$$P_1 @ 0.49L', 0.0949 \times 4^k = 0.38^k$$

$$P_2 @ 0.60L', 0.1034 \times 25 = 2.59$$

$$P_3 @ 0.82L', 0.0768 \times 25 = 1.92$$

$$\underline{4.89^k}$$

M/L at *C*, due to truck in Span 3, when:

$$P_1 @ 0.07L', 0.0294 \times 4^k = 0.12^k$$

$$P_2 @ 0.20L', 0.0707 \times 25 = 1.77$$

$$P_3 @ 0.47L', 0.0927 \times 25 = 2.32$$

$$\underline{4.21^k}$$

$$P_1 @ 0.17L', 0.0621 \times 4^k = 0.25^k$$

$$P_2 @ 0.30L', 0.0877 \times 25 = 2.19$$

$$P_3 @ 0.57L', 0.0854 \times 25 = 2.14$$

$$\underline{4.58^k} \blacktriangleleft$$

$$P_1 @ 0.27L', 0.0826 \times 4^k = 0.33^k$$

$$P_2 @ 0.40L', 0.0943 \times 25 = 2.36$$

$$P_3 @ 0.67L', 0.0717 \times 25 = 1.79$$

$$\underline{4.48^k}$$

For 1 moving truck, including impact:

$$M_{L+I} = 1.241 \times 5.15^k \times 75' = 479^{k'}$$

For 2 standing trucks, no impact:

$$M_L = (4.58^k + 5.15^k) 75' = 730^{k'} \text{ (governs)}$$

$$M_D \text{ (See Prob. \#2)} = \frac{618^{k'}}{1348^{k'}}$$

$$f_b = \frac{1348 \times 12}{835.5} = 19.4 \text{ ksi}$$

Shear at field splice 18' from supports in Span 2

$$\text{With } P_1 @ 0.20L, V_{BC} = 0.8360 \times 25^k = 20.9^k$$

$$P_2 @ 0.42L, = 0.5944 \times 25 = 14.9$$

$$P_3 @ 0.53L, = 0.4646 \times 4 = 1.9$$

$$\text{L.L. shear} = \underline{37.7^k}$$

$$\text{D.L. shear} = 0.9^k \left(\frac{90'}{2} - 18' \right) = 24.3$$

$$\text{Total shear} = \underline{62.0^k}$$

Comment:

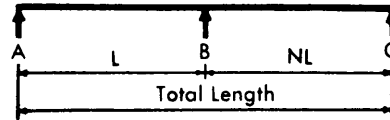
In the above calculations influence coefficients were obtained by interpolation, placing the loads at the nearest one-hundredth of span length. While no general conclusion can be drawn, it is interesting to note that, in the given example, any error resulting from rounding off actual load positions to the nearest tenth of the span, in order to avoid interpolation, would not have exceeded 3 per cent for live load alone nor 2 per cent for live plus impact plus dead load.

TABLES

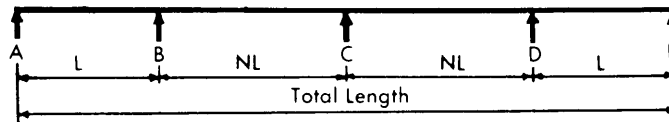
| | |
|------------------------|--------------------|
| AASHO HS20-44 loading. | 2 Continuous Spans |
| | 3 Continuous Spans |
| | 4 Continuous Spans |

| | |
|------------------------|--------------------|
| Influence coefficients | 2 Continuous Spans |
| | 3 Continuous Spans |
| | 4 Continuous Spans |

Two-span continuous beam.

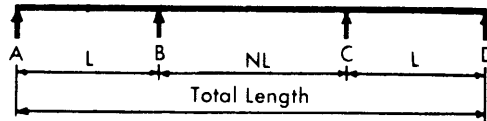


Symmetrical four-span continuous beam.



| Total Length | | N=1.0 | | N=1.1 | | N=1.2 | | N=1.3 | | N=1.4 | | N=1.5 | | N=1.6 | | N=1.7 | |
|--------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| 2 Span | 4 Span | L | NL | L | NL | L | NL | L | NL | L | NL | L | NL | L | NL | L | NL |
| 60 | 120 | 30.0 | 30.0 | 28.6 | 31.4 | 27.3 | 32.7 | 26.1 | 33.9 | 25.0 | 35.0 | 24.0 | 36.0 | 23.1 | 36.9 | 37.8 | 22.2 |
| 70 | 140 | 35.0 | 35.0 | 33.3 | 36.7 | 31.8 | 38.2 | 30.4 | 39.6 | 29.2 | 40.8 | 28.0 | 42.0 | 26.9 | 43.1 | 44.1 | 25.9 |
| 80 | 160 | 40.0 | 40.0 | 38.1 | 41.9 | 36.4 | 43.6 | 34.8 | 45.2 | 33.3 | 46.7 | 32.0 | 48.0 | 30.8 | 49.2 | 50.4 | 29.6 |
| 90 | 180 | 45.0 | 45.0 | 42.9 | 47.1 | 40.9 | 49.1 | 39.1 | 50.9 | 37.5 | 52.5 | 36.0 | 54.0 | 34.6 | 55.4 | 56.7 | 33.3 |
| 100 | 200 | 50.0 | 50.0 | 47.6 | 52.4 | 45.5 | 54.5 | 43.5 | 56.5 | 41.7 | 58.3 | 40.0 | 60.0 | 38.5 | 61.5 | 63.0 | 37.0 |
| 110 | 220 | 55.0 | 55.0 | 52.4 | 57.6 | 50.0 | 60.0 | 47.8 | 62.2 | 45.8 | 64.2 | 44.0 | 66.0 | 42.3 | 67.7 | 69.3 | 40.7 |
| 120 | 240 | 60.0 | 60.0 | 57.1 | 62.9 | 54.5 | 65.5 | 52.2 | 67.8 | 50.0 | 70.0 | 48.0 | 72.0 | 46.2 | 73.8 | 75.6 | 44.4 |
| 130 | 260 | 65.0 | 65.0 | 61.9 | 68.1 | 59.1 | 70.9 | 56.5 | 73.5 | 54.2 | 75.8 | 52.0 | 78.0 | 50.0 | 80.0 | 81.9 | 48.1 |
| 140 | 280 | 70.0 | 70.0 | 66.7 | 73.3 | 63.6 | 76.4 | 60.9 | 79.1 | 58.3 | 81.7 | 56.0 | 84.0 | 53.8 | 86.2 | 88.1 | 51.9 |
| 150 | 300 | 75.0 | 75.0 | 71.4 | 78.6 | 68.2 | 81.8 | 65.2 | 84.8 | 62.5 | 87.5 | 60.0 | 90.0 | 57.7 | 92.3 | 94.4 | 55.6 |
| 160 | 320 | 80.0 | 80.0 | 76.2 | 83.8 | 72.7 | 87.3 | 69.6 | 90.4 | 66.7 | 93.3 | 64.0 | 96.0 | 61.5 | 98.5 | 100.7 | 59.3 |
| 170 | 340 | 85.0 | 85.0 | 81.0 | 89.0 | 77.3 | 92.7 | 73.9 | 96.1 | 70.8 | 99.2 | 68.0 | 102.0 | 65.4 | 104.6 | 107.0 | 63.0 |
| 180 | 360 | 90.0 | 90.0 | 85.7 | 94.3 | 81.8 | 98.2 | 78.3 | 101.7 | 75.0 | 105.0 | 72.0 | 108.0 | 69.2 | 110.8 | 113.3 | 66.7 |
| 190 | 380 | 95.0 | 95.0 | 90.5 | 99.5 | 86.4 | 103.6 | 82.6 | 107.4 | 79.2 | 110.8 | 76.0 | 114.0 | 73.1 | 116.9 | 119.6 | 70.4 |
| 200 | 400 | 100.0 | 100.0 | 95.2 | 104.8 | 90.9 | 109.1 | 87.0 | 113.0 | 83.3 | 116.7 | 80.0 | 120.0 | 76.9 | 123.1 | 125.9 | 74.1 |
| 210 | 420 | 105.0 | 105.0 | 100.0 | 110.0 | 95.5 | 114.5 | 91.3 | 118.7 | 87.5 | 122.5 | 84.0 | 126.0 | 80.8 | 129.2 | 132.2 | 77.8 |
| 220 | 440 | 110.0 | 110.0 | 104.8 | 115.2 | 100.0 | 120.0 | 95.7 | 124.3 | 91.7 | 128.3 | 88.0 | 132.0 | 84.6 | 135.4 | 138.5 | 81.5 |
| 230 | 460 | 115.0 | 115.0 | 109.5 | 120.5 | 104.5 | 125.5 | 100.0 | 130.0 | 95.8 | 134.2 | 92.0 | 138.0 | 88.5 | 141.5 | 144.8 | 85.2 |
| 240 | 480 | 120.0 | 120.0 | 114.3 | 125.7 | 109.1 | 130.9 | 104.3 | 135.7 | 100.0 | 140.0 | 96.0 | 144.0 | 92.3 | 147.7 | 151.1 | 88.9 |

Symmetrical three-span continuous beam.



| Total Length | N=1.0 | | N=1.1 | | N=1.2 | | N=1.3 | | N=1.4 | | N=1.5 | | N=1.6 | | N=1.7 | |
|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | L | NL | L | NL | L | NL | L | NL | L | NL | L | NL | L | NL | L | NL |
| 90 | 30.0 | 30.0 | 29.0 | 31.9 | 28.1 | 33.8 | 27.3 | 35.5 | 26.5 | 37.1 | 25.7 | 38.6 | 25.0 | 40.0 | 24.3 | 41.4 |
| 105 | 35.0 | 35.0 | 33.9 | 37.3 | 32.8 | 39.4 | 31.8 | 41.4 | 30.9 | 43.2 | 30.0 | 45.0 | 29.2 | 46.7 | 28.4 | 48.2 |
| 120 | 40.0 | 40.0 | 38.7 | 42.6 | 37.5 | 45.0 | 36.4 | 47.3 | 35.3 | 49.4 | 34.3 | 51.4 | 33.3 | 53.3 | 32.4 | 55.1 |
| 135 | 45.0 | 45.0 | 43.5 | 47.9 | 42.2 | 50.6 | 40.9 | 53.2 | 39.7 | 55.6 | 38.6 | 57.9 | 37.5 | 60.0 | 36.5 | 62.0 |
| 150 | 50.0 | 50.0 | 48.4 | 53.2 | 46.9 | 56.3 | 45.5 | 59.1 | 44.1 | 61.8 | 42.9 | 64.3 | 41.7 | 66.7 | 40.5 | 68.9 |
| 165 | 55.0 | 55.0 | 53.2 | 58.5 | 51.6 | 61.9 | 50.0 | 65.0 | 48.5 | 67.9 | 47.1 | 70.7 | 45.8 | 73.3 | 44.6 | 75.8 |
| 180 | 60.0 | 60.0 | 58.1 | 63.9 | 56.3 | 67.5 | 54.5 | 70.9 | 52.9 | 74.1 | 51.4 | 77.1 | 50.0 | 80.0 | 48.6 | 82.7 |
| 195 | 65.0 | 65.0 | 62.9 | 69.2 | 60.9 | 73.1 | 59.1 | 76.8 | 57.4 | 80.3 | 55.7 | 83.6 | 54.2 | 86.7 | 52.7 | 89.6 |
| 210 | 70.0 | 70.0 | 67.7 | 74.5 | 65.6 | 78.8 | 63.6 | 82.7 | 61.8 | 86.5 | 60.0 | 90.0 | 58.3 | 93.3 | 56.8 | 96.5 |
| 225 | 75.0 | 75.0 | 72.6 | 79.8 | 70.3 | 84.4 | 68.2 | 88.6 | 66.2 | 92.6 | 64.3 | 96.4 | 62.5 | 100.0 | 60.8 | 103.4 |
| 240 | 80.0 | 80.0 | 77.4 | 85.2 | 75.0 | 90.0 | 72.7 | 94.5 | 70.6 | 98.8 | 68.6 | 102.9 | 66.7 | 106.7 | 64.9 | 110.3 |
| 255 | 85.0 | 85.0 | 82.3 | 90.5 | 79.7 | 95.6 | 77.3 | 100.5 | 75.0 | 105.0 | 72.9 | 109.3 | 70.8 | 113.3 | 68.9 | 117.2 |
| 270 | 90.0 | 90.0 | 87.1 | 95.8 | 84.4 | 101.3 | 81.8 | 106.4 | 79.4 | 111.2 | 77.1 | 115.7 | 75.0 | 120.0 | 73.0 | 124.1 |
| 285 | 95.0 | 95.0 | 91.9 | 101.1 | 89.1 | 106.9 | 86.4 | 112.3 | 83.8 | 117.4 | 81.4 | 122.1 | 79.2 | 126.7 | 77.0 | 130.9 |
| 300 | 100.0 | 100.0 | 96.8 | 106.5 | 93.8 | 112.5 | 90.9 | 118.2 | 88.2 | 123.5 | 85.7 | 128.6 | 83.3 | 133.3 | 81.1 | 137.8 |
| 315 | 105.0 | 105.0 | 101.6 | 111.8 | 98.4 | 118.1 | 95.5 | 124.1 | 92.6 | 129.7 | 90.0 | 135.0 | 87.5 | 140.0 | 85.1 | 144.7 |
| 330 | 110.0 | 110.0 | 106.5 | 117.1 | 103.1 | 123.8 | 100.0 | 130.0 | 97.1 | 135.9 | 94.3 | 141.4 | 91.7 | 146.7 | 89.2 | 151.6 |
| 345 | 115.0 | 115.0 | 111.3 | 122.4 | 107.8 | 129.4 | 104.5 | 135.9 | 101.5 | 142.1 | 98.6 | 147.9 | 95.8 | 153.3 | 93.2 | 158.5 |
| 360 | 120.0 | 120.0 | 116.1 | 127.7 | 112.5 | 135.0 | 109.1 | 141.8 | 105.9 | 148.2 | 102.9 | 154.3 | 100.0 | 160.0 | 97.3 | 165.4 |

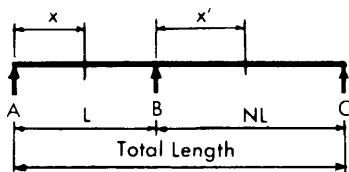
N=1.0

TABLE 2.0

Two-span continuous beam.

Constant moment of inertia.

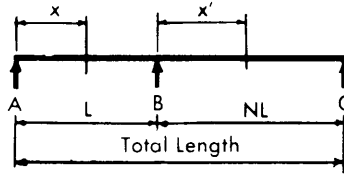
AASHO HS20-44 loading.



| Total Length Ft. | Short Span Length "L" | Max. Reaction Kips. | | | Max. Shear Kips. | | Max. Moment Kip.-ft. | | | Impact Coefficient | | | | Dist.-Ft. | |
|------------------|-----------------------|---------------------|----------------|---------------|------------------|---------------|----------------------------|------------------------------|----------------------------|--------------------|------|------|------|--------------|--------------|
| | | at A | at B | at C | in AB at B | in BC at B | in AB at X | at B | in BC at X' | I | II | III | IV | X | X' |
| 60 | 30.0 | 46.4 | 63.1 | 46.4 | -52.9 | 52.9 | 231.4 | -193.1 | 231.4 | .300 | .300 | .300 | .270 | 10.7 | 19.3 |
| 70 | 35.0 | 49.5 | 65.3 | 49.5 | -56.3 | 56.3 | 290.9 | -229.4 | 290.9 | .300 | .300 | .300 | .256 | 12.7 | 22.3 |
| 80 | 40.0 | 52.0 | 66.8 | 52.0 | -58.7 | 58.7 | 358.2 | -266.6 | 358.2 | .300 | .300 | .300 | .244 | 16.1 | 23.9 |
| 90 | 45.0 | 54.1 | 67.8 | 54.1 | -60.6 | 60.6 | 429.1 | -317.9 | 429.1 | .294 | .294 | .294 | .233 | 18.2 | 26.8 |
| 100 | 50.0 | 55.7 | 68.6 | 55.7 | -62.0 | 62.0 | 500.7 | -373.2 | 500.7 | .286 | .286 | .286 | .222 | 20.3 | 29.7 |
| 110 | 55.0 | 57.1 | 70.0 | 57.1 | -63.2 | 63.2 | 572.9 | -432.5 | 572.9 | .278 | .278 | .278 | .213 | 22.4 | 32.6 |
| 120 | 60.0 | 58.3 | 74.0 | 58.3 | -64.1 | 64.1 | 645.5 | -495.8 | 645.5 | .270 | .270 | .270 | .204 | 24.5 | 35.5 |
| 130 | 65.0 | 59.3 | 78.0 | 59.3 | -64.8 | 64.8 | 718.5 | -563.2 | 718.5 | .263 | .263 | .263 | .196 | 26.6 | 38.4 |
| 140 | 70.0 | 60.2 | 82.0 | 60.2 | -65.5 | 65.5 | 791.6 | -634.5 | 791.6 | .256 | .256 | .256 | .189 | 28.7 | 41.3 |
| 150 | 75.0 | 61.0 | 86.0 | 61.0 | -66.0 | 66.0 | 865.0 | -709.8 | 865.0 | .250 | .250 | .250 | .182 | 30.8 | 44.2 |
| 160 | 80.0 | 61.6 | 90.0 | 61.6 | -66.5 | 66.5 | 938.6 | -789.1 | 938.6 | .244 | .244 | .244 | .175 | 33.0 | 47.0 |
| 170 | 85.0 | 62.2 | 94.0 | 62.2 | -66.9 | 66.9 | 1012.3 | -872.4 | 1012.3 | .238 | .238 | .238 | .169 | 35.1 | 49.9 |
| 180 | 90.0 | 62.8 | 98.0 | 62.8 | -67.2 | 67.2 | 1086.0 | -959.8 | 1086.0 | .233 | .233 | .233 | .164 | 37.3 | 52.7 |
| 190 | 95.0 | 63.2 | 102.0 | 63.2 | -67.5 | 67.5 | 1159.9 | -1051.1 | 1159.9 | .227 | .227 | .227 | .159 | 39.4 | 55.6 |
| 200 | 100.0 | 63.7 | 106.0 | 63.7 | -67.8 | 67.8 | 1233.9 | -1146.4 | 1233.9 | .222 | .222 | .222 | .154 | 41.5 | 58.5 |
| 210 | 105.0 | 64.1 | 110.0 | 64.1 | -68.0 | 68.0 | 1307.9 | -1245.7 | 1307.9 | .217 | .217 | .217 | .149 | 43.7 | 61.3 |
| 220 | 110.0 | 64.4 | 114.0 | 64.4 | -70.0 | 70.0 | 1382.0 | -1349.1 | 1382.0 | .213 | .213 | .213 | .145 | 45.8 | 64.2 |
| 230 | 115.0 | 64.7 | 118.0 | 64.7 | -72.0 | 72.0 | 1456.1 | -1456.4 | 1456.1 | .208 | .208 | .208 | .141 | 48.0 | 67.0 |
| 240 | 120.0 | 65.0 | 122.0 | 65.0 | -74.0 | 74.0 | 1530.3 | -1567.7 | 1530.3 | .204 | .204 | .204 | .137 | 50.1 | 69.9 |
| Impact | | I | IV | III | I | III | I | II | III | | | | | | |
| Dead Load | | .3750 x wL | 1.2500 x wL | .3750 x wL | -.6250 x wL | .6250 x wL | .0703 x wL ² | -1.1250 x wL ² | .0703 x wL ² | | | | | .3750 x L | .6250 x L |

TABLE 2.1

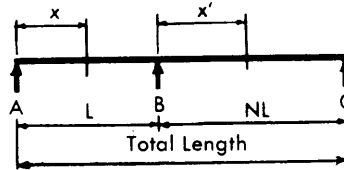
Two-span continuous beam.
 Constant moment of inertia.
 AASHO HS20-44 loading.



| Total Length Ft. | Short Span Length "L" | Max. Reaction Kips. | | | Max. Shear Kips. | | Max. Moment Kip.-ft. | | | Impact Coefficient | | | | Dist.-ft. | |
|------------------|-----------------------|---------------------|----------------|---------------|------------------|---------------|----------------------------|-----------------------------|----------------------------|--------------------|------|------|------|--------------|--------------|
| | | at A | at B | at C | in AB at B | in BC at B | in AB at X | at B | in BC at X' | I | II | III | IV | X | X' |
| 60 | 28.6 | 45.6 | 63.1 | 47.2 | -52.1 | 54.1 | 217.0 | -195.6 | 245.6 | .300 | .300 | .300 | .270 | 10.2 | 20.2 |
| 70 | 33.3 | 48.7 | 65.4 | 50.3 | -55.1 | 57.3 | 273.7 | -232.4 | 307.8 | .300 | .300 | .300 | .256 | 12.1 | 23.3 |
| 80 | 38.1 | 51.3 | 66.9 | 52.7 | -57.7 | 59.7 | 335.4 | -268.3 | 380.7 | .300 | .300 | .300 | .244 | 15.4 | 25.1 |
| 90 | 42.9 | 53.4 | 67.9 | 54.7 | -59.7 | 61.4 | 403.2 | -319.3 | 454.5 | .298 | .294 | .290 | .233 | 17.4 | 28.2 |
| 100 | 47.6 | 55.1 | 68.7 | 56.3 | -61.2 | 62.8 | 471.8 | -375.0 | 529.0 | .290 | .286 | .282 | .222 | 19.4 | 31.3 |
| 110 | 52.4 | 56.6 | 70.1 | 57.6 | -62.5 | 63.8 | 541.0 | -434.6 | 604.2 | .282 | .278 | .274 | .213 | 21.4 | 34.3 |
| 120 | 57.1 | 57.8 | 74.1 | 58.8 | -63.4 | 64.7 | 610.7 | -498.3 | 679.7 | .275 | .270 | .266 | .204 | 23.4 | 37.4 |
| 130 | 61.9 | 58.8 | 78.1 | 59.8 | -64.2 | 65.4 | 680.6 | -566.0 | 755.6 | .268 | .263 | .259 | .196 | 25.4 | 40.4 |
| 140 | 66.7 | 59.7 | 82.1 | 60.6 | -64.9 | 66.0 | 750.9 | -637.7 | 831.7 | .261 | .256 | .252 | .189 | 27.5 | 43.4 |
| 150 | 71.4 | 60.5 | 86.1 | 61.3 | -65.5 | 66.5 | 821.3 | -713.5 | 908.0 | .255 | .250 | .246 | .182 | 29.5 | 46.4 |
| 160 | 76.2 | 61.2 | 90.2 | 62.0 | -66.0 | 66.9 | 891.9 | -793.2 | 984.4 | .249 | .244 | .239 | .175 | 31.6 | 49.5 |
| 170 | 81.0 | 61.8 | 94.2 | 62.6 | -66.4 | 67.3 | 962.6 | -877.0 | 1061.0 | .243 | .238 | .234 | .169 | 33.6 | 52.5 |
| 180 | 85.7 | 62.4 | 98.2 | 63.1 | -66.8 | 67.6 | 1033.4 | -964.9 | 1137.7 | .237 | .233 | .228 | .164 | 35.7 | 55.5 |
| 190 | 90.5 | 62.9 | 102.2 | 63.5 | -67.1 | 67.9 | 1104.4 | -1056.7 | 1214.4 | .232 | .227 | .223 | .159 | 37.7 | 58.5 |
| 200 | 95.2 | 63.3 | 106.2 | 64.0 | -67.4 | 68.1 | 1175.4 | -1152.6 | 1291.3 | .227 | .222 | .218 | .154 | 39.8 | 61.5 |
| 210 | 100.0 | 63.7 | 110.2 | 64.3 | -67.6 | 69.3 | 1246.5 | -1252.6 | 1368.2 | .222 | .217 | .213 | .149 | 41.9 | 64.5 |
| 220 | 104.8 | 64.1 | 114.2 | 64.7 | -68.8 | 71.3 | 1317.6 | -1356.5 | 1445.2 | .218 | .213 | .208 | .145 | 43.9 | 67.5 |
| 230 | 109.5 | 64.5 | 118.2 | 65.0 | -70.8 | 73.4 | 1388.8 | -1464.5 | 1522.2 | .213 | .208 | .204 | .141 | 46.0 | 70.5 |
| 240 | 114.3 | 64.8 | 122.2 | 65.3 | -72.7 | 75.5 | 1460.1 | -1576.5 | 1599.3 | .209 | .204 | .199 | .137 | 48.0 | 73.5 |
| Impact | | I | IV | III | I | III | I | II | III | | | | | | |
| Dead Load | | .3613 x wL | 1.3149 x wL | .4239 x wL | .6388 x wL | .6761 x wL | .0653 x wL ² | -.1387 x wL ² | .0898 x wL ² | | | | | .3613 x L | .6761 x L |

TABLE 2.2

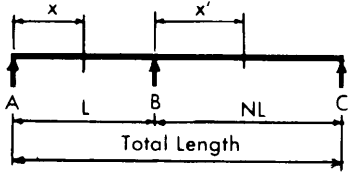
Two-span continuous beam.
 Constant moment of inertia.
 AASHO HS20-44 loading.



| Total Length Ft. | Short Span Length "L" | Max. Reaction Kips. | | | Max. Shear Kips. | | Max. Moment Kip.-ft. | | | Impact Coefficient | | | | Dist.-Ft. | |
|------------------|-----------------------|---------------------|----------------|---------------|------------------|---------------|----------------------------|-----------------------------|----------------------------|--------------------|------|------|------|--------------|--------------|
| | | at A | at B | at C | in AB at B | in BC at B | in AB at X | at B | in BC at X' | I | II | III | IV | X | X' |
| 60 | 27.3 | 44.8 | 63.4 | 47.9 | -51.3 | 55.1 | 203.7 | -198.7 | 258.4 | .300 | .300 | .300 | .270 | 9.7 | 21.0 |
| 70 | 31.8 | 47.9 | 65.7 | 50.9 | -53.9 | 58.3 | 257.8 | -236.1 | 325.4 | .300 | .300 | .300 | .256 | 11.5 | 23.0 |
| 80 | 36.4 | 50.6 | 67.2 | 53.3 | -56.7 | 60.5 | 313.7 | -272.6 | 400.7 | .300 | .300 | .296 | .244 | 13.4 | 26.2 |
| 90 | 40.9 | 52.7 | 68.2 | 55.2 | -58.8 | 62.1 | 379.3 | -323.2 | 477.2 | .300 | .294 | .287 | .233 | 16.7 | 29.5 |
| 100 | 45.5 | 54.5 | 69.0 | 56.8 | -60.4 | 63.4 | 445.1 | -379.6 | 554.4 | .293 | .286 | .278 | .222 | 18.6 | 32.7 |
| 110 | 50.0 | 56.0 | 70.4 | 58.1 | -61.7 | 64.4 | 511.6 | -440.1 | 632.1 | .286 | .278 | .270 | .213 | 20.5 | 35.9 |
| 120 | 54.5 | 57.2 | 74.5 | 59.2 | -62.8 | 65.2 | 578.5 | -504.7 | 710.3 | .278 | .270 | .263 | .204 | 22.4 | 39.0 |
| 130 | 59.1 | 58.3 | 78.5 | 60.1 | -63.6 | 65.9 | 645.7 | -573.4 | 788.7 | .272 | .263 | .255 | .196 | 24.4 | 42.2 |
| 140 | 63.6 | 59.3 | 82.5 | 61.0 | -64.4 | 66.4 | 713.1 | -646.2 | 867.4 | .265 | .256 | .248 | .189 | 26.3 | 45.4 |
| 150 | 68.2 | 60.1 | 86.5 | 61.7 | -65.0 | 66.9 | 780.8 | -723.1 | 946.3 | .259 | .250 | .242 | .182 | 28.3 | 48.5 |
| 160 | 72.7 | 60.8 | 90.6 | 62.3 | -65.5 | 67.3 | 848.7 | -804.1 | 1025.3 | .253 | .244 | .236 | .175 | 30.3 | 51.7 |
| 170 | 77.3 | 61.5 | 94.6 | 62.9 | -66.0 | 67.6 | 916.7 | -889.2 | 1104.5 | .247 | .238 | .230 | .169 | 32.2 | 54.9 |
| 180 | 81.8 | 62.0 | 98.6 | 63.4 | -66.4 | 67.9 | 984.8 | -978.4 | 1183.8 | .242 | .233 | .224 | .164 | 34.2 | 58.0 |
| 190 | 86.4 | 62.5 | 102.7 | 63.8 | -66.7 | 68.2 | 1053.0 | -1071.7 | 1263.1 | .237 | .227 | .219 | .159 | 36.2 | 61.2 |
| 200 | 90.9 | 63.0 | 106.7 | 64.2 | -67.0 | 68.4 | 1121.3 | -1169.1 | 1342.6 | .232 | .222 | .214 | .154 | 38.2 | 64.3 |
| 210 | 95.5 | 63.4 | 110.7 | 64.6 | -67.3 | 70.5 | 1189.6 | -1270.6 | 1422.1 | .227 | .217 | .209 | .149 | 40.2 | 67.4 |
| 220 | 100.0 | 63.8 | 114.7 | 64.9 | -67.9 | 72.7 | 1258.0 | -1376.2 | 1501.6 | .222 | .213 | .204 | .145 | 42.1 | 70.6 |
| 230 | 104.5 | 64.2 | 118.8 | 65.2 | -69.8 | 74.8 | 1326.5 | -1485.9 | 1581.2 | .218 | .208 | .200 | .141 | 44.1 | 73.7 |
| 240 | 109.1 | 64.5 | 122.8 | 65.5 | -71.7 | 76.9 | 1395.0 | -1599.7 | 1660.9 | .214 | .204 | .195 | .137 | 46.1 | 76.9 |
| Impact | | I | IV | III | I | III | I | II | III | | | | | | |
| Dead Load | | .3450 x wL | 1.3842 x wL | .4708 x wL | .6550 x wL | .7292 x wL | .0595 x wL ² | -.1550 x wL ² | .1108 x wL ² | | | | | .3450 x L | .7292 x L |

TABLE 2.3

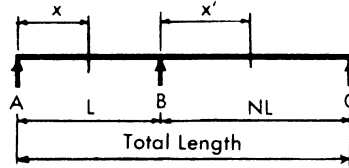
Two-span continuous beam.
 Constant moment of inertia.
 AASHO HS20-44 loading.



| Total Span Length Ft. | Short Span Length "L" | Max. Reaction Kips. | | | Max. Shear Kips. | | Max. Moment Kip.-ft. | | | Impact Coefficient | | | | Dist.-Ft. | |
|-----------------------|-----------------------|---------------------|---------------|---------------|------------------|---------------|----------------------------|-----------------------------|----------------------------|--------------------|------|------|------|--------------|--------------|
| | | at A | at B | at C | in AB at B | in BC at B | in AB at X | at B | in BC at X' | I | II | III | IV | X | X' |
| 60 | 26.1 | 44.2 | 63.8 | 48.5 | -50.5 | 56.0 | 191.5 | -206.2 | 269.8 | .300 | .300 | .300 | .270 | 9.2 | 21.8 |
| 70 | 30.4 | 47.2 | 66.1 | 51.4 | -53.0 | 59.0 | 243.1 | -248.6 | 341.0 | .300 | .300 | .300 | .256 | 11.0 | 23.9 |
| 80 | 34.8 | 49.8 | 67.6 | 53.7 | -55.7 | 61.1 | 296.7 | -292.5 | 418.7 | .300 | .300 | .294 | .244 | 12.8 | 27.3 |
| 90 | 39.1 | 52.0 | 68.7 | 55.6 | -57.9 | 62.7 | 357.1 | -342.8 | 497.6 | .300 | .294 | .284 | .233 | 16.0 | 30.6 |
| 100 | 43.5 | 53.9 | 69.4 | 57.2 | -59.6 | 63.9 | 420.4 | -392.1 | 577.1 | .297 | .286 | .275 | .222 | 17.8 | 34.0 |
| 110 | 47.8 | 55.4 | 70.9 | 58.4 | -61.0 | 64.9 | 484.2 | -448.1 | 657.2 | .289 | .278 | .267 | .213 | 19.7 | 37.3 |
| 120 | 52.2 | 56.7 | 75.0 | 59.5 | -62.1 | 65.6 | 548.6 | -514.1 | 737.7 | .282 | .270 | .259 | .204 | 21.5 | 40.6 |
| 130 | 56.5 | 57.8 | 79.0 | 60.5 | -63.0 | 66.2 | 613.2 | -584.2 | 818.5 | .275 | .263 | .252 | .196 | 23.4 | 43.9 |
| 140 | 60.9 | 58.8 | 83.1 | 61.3 | -63.8 | 66.8 | 678.1 | -658.6 | 899.5 | .269 | .256 | .245 | .189 | 25.3 | 47.2 |
| 150 | 65.2 | 59.7 | 87.1 | 62.0 | -64.5 | 67.2 | 743.3 | -737.2 | 980.7 | .263 | .250 | .238 | .182 | 27.2 | 50.5 |
| 160 | 69.6 | 60.4 | 91.2 | 62.6 | -65.0 | 67.6 | 808.6 | -820.0 | 1062.1 | .257 | .244 | .232 | .175 | 29.1 | 53.8 |
| 170 | 73.9 | 61.1 | 95.2 | 63.1 | -65.5 | 67.9 | 874.0 | -907.0 | 1143.6 | .251 | .238 | .226 | .169 | 31.0 | 57.0 |
| 180 | 78.3 | 61.7 | 99.3 | 63.6 | -65.9 | 68.2 | 939.6 | -998.1 | 1225.2 | .246 | .233 | .221 | .164 | 32.9 | 60.3 |
| 190 | 82.6 | 62.2 | 103.4 | 64.0 | -66.3 | 68.4 | 1005.3 | -1093.5 | 1306.9 | .241 | .227 | .215 | .159 | 34.8 | 63.6 |
| 200 | 87.0 | 62.7 | 107.4 | 64.4 | -66.6 | 69.6 | 1071.0 | -1193.1 | 1388.6 | .236 | .222 | .210 | .154 | 36.7 | 66.9 |
| 210 | 91.3 | 63.1 | 111.5 | 64.8 | -66.9 | 71.8 | 1136.9 | -1296.9 | 1470.5 | .231 | .217 | .205 | .149 | 38.6 | 70.1 |
| 220 | 95.7 | 63.5 | 115.5 | 65.1 | -67.2 | 74.0 | 1202.7 | -1404.9 | 1552.3 | .227 | .213 | .201 | .145 | 40.5 | 73.4 |
| 230 | 100.0 | 63.9 | 119.6 | 65.4 | -69.1 | 76.2 | 1268.7 | -1517.1 | 1634.3 | .222 | .208 | .196 | .141 | 42.4 | 76.7 |
| 240 | 104.3 | 64.2 | 123.6 | 65.7 | -71.0 | 78.3 | 1334.7 | -1633.6 | 1716.2 | .218 | .204 | .192 | .137 | 44.3 | 80.0 |
| Impact | | I | IV | III | I | III | I | II | III | | | | | | |
| Dead Load | | .3263 x wL | .4574 x wL | .5163 x wL | -.6737 x wL | .7837 x wL | .0532 x wL ² | -.1737 x wL ² | .1333 x wL ² | | | | | .3263 x L | .7837 x L |

TABLE 2.4

Two-span continuous beam.
 Constant moment of inertia.
 AASHO HS20-44 loading.



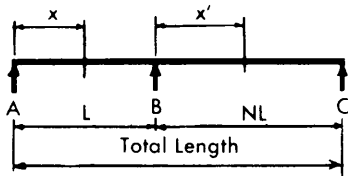
| Total Length Ft. | Short Span Length "L" | Max. Reaction Kips. | | | Max. Shear Kips. | | Max. Moment Kip.-ft. | | | Impact Coefficient | | | | Dist.-Ft. | |
|------------------|-----------------------|---------------------|----------------|---------------|------------------|---------------|----------------------------|-----------------------------|----------------------------|--------------------|------|------|------|--------------|--------------|
| | | at A | at B | at C | in AB at B | in BC at B | in AB at X | at B | in BC at X' | I | II | III | IV | X | X' |
| 60 | 25.0 | 43.5 | 64.4 | 49.0 | -49.7 | 56.8 | 180.2 | -220.1 | 280.2 | .300 | .300 | .300 | .270 | 8.8 | 22.5 |
| 70 | 29.2 | 46.4 | 66.6 | 51.9 | -52.4 | 59.7 | 229.6 | -264.8 | 355.1 | .300 | .300 | .300 | .256 | 10.5 | 24.7 |
| 80 | 33.3 | 49.1 | 68.1 | 54.2 | -54.7 | 61.7 | 280.9 | -315.3 | 435.0 | .300 | .300 | .291 | .244 | 12.3 | 28.2 |
| 90 | 37.5 | 51.4 | 69.2 | 56.0 | -57.0 | 63.2 | 336.4 | -368.6 | 516.0 | .300 | .294 | .282 | .233 | 15.4 | 31.7 |
| 100 | 41.7 | 53.3 | 69.9 | 57.5 | -58.8 | 64.4 | 397.3 | -420.8 | 597.7 | .300 | .286 | .273 | .222 | 17.1 | 35.1 |
| 110 | 45.8 | 54.9 | 71.5 | 58.8 | -60.3 | 65.3 | 458.8 | -472.1 | 679.9 | .293 | .278 | .264 | .213 | 18.9 | 38.6 |
| 120 | 50.0 | 56.2 | 75.6 | 59.8 | -61.5 | 66.0 | 520.7 | -525.6 | 762.5 | .286 | .270 | .256 | .204 | 20.7 | 42.0 |
| 130 | 54.2 | 57.4 | 79.7 | 60.7 | -62.4 | 66.6 | 583.0 | -597.6 | 845.4 | .279 | .263 | .249 | .196 | 22.5 | 45.4 |
| 140 | 58.3 | 58.4 | 83.8 | 61.5 | -63.3 | 67.1 | 645.6 | -673.9 | 928.5 | .273 | .256 | .242 | .189 | 24.3 | 48.8 |
| 150 | 62.5 | 59.2 | 87.9 | 62.2 | -63.9 | 67.5 | 708.4 | -754.5 | 1011.8 | .267 | .250 | .235 | .182 | 26.1 | 52.3 |
| 160 | 66.7 | 60.0 | 92.0 | 62.8 | -64.5 | 67.8 | 771.3 | -839.5 | 1095.3 | .261 | .244 | .229 | .175 | 28.0 | 55.7 |
| 170 | 70.8 | 60.7 | 96.1 | 63.3 | -65.1 | 68.1 | 834.4 | -928.8 | 1178.9 | .255 | .238 | .223 | .169 | 29.8 | 59.1 |
| 180 | 75.0 | 61.3 | 100.2 | 63.8 | -65.5 | 68.4 | 897.6 | -1022.4 | 1262.6 | .250 | .233 | .217 | .164 | 31.6 | 62.5 |
| 190 | 79.2 | 61.9 | 104.2 | 64.2 | -65.9 | 68.6 | 960.9 | -1120.4 | 1346.4 | .245 | .227 | .212 | .159 | 33.4 | 65.9 |
| 200 | 83.3 | 62.4 | 108.3 | 64.6 | -66.3 | 70.8 | 1024.3 | -1222.7 | 1430.2 | .240 | .222 | .207 | .154 | 35.3 | 69.3 |
| 210 | 87.5 | 62.8 | 112.4 | 65.0 | -66.6 | 73.0 | 1087.8 | -1329.3 | 1514.2 | .235 | .217 | .202 | .149 | 37.1 | 72.6 |
| 220 | 91.7 | 63.2 | 116.5 | 65.3 | -66.9 | 75.2 | 1151.3 | -1440.3 | 1598.1 | .231 | .213 | .197 | .145 | 38.9 | 76.0 |
| 230 | 95.8 | 63.6 | 120.6 | 65.6 | -68.6 | 77.5 | 1214.9 | -1555.6 | 1682.1 | .226 | .208 | .193 | .141 | 40.8 | 79.4 |
| 240 | 100.0 | 63.9 | 124.7 | 65.8 | -70.5 | 79.7 | 1278.5 | -1675.2 | 1766.2 | .222 | .204 | .189 | .137 | 42.6 | 82.8 |
| Impact | | I | IV | III | I | III | I | II | III | | | | | | |
| Dead Load | | .3050 x WL | 1.5343 x WL | .5607 x WL | -.6950 x WL | .8393 x WL | .0465 x WL ² | -.1950 x WL ² | .1572 x WL ² | | | | | .3050 x L | .8393 x L |

TABLE 2.5

Two-span continuous beam.

Constant moment of inertia.

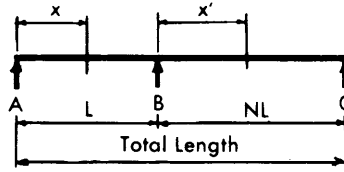
AASHO HS20-44 loading.



| Total Length Ft. | Short Span Length "L" | Max. Reaction Kips. | | | Max. Shear Kips. | | Max. Moment Kip.-ft. | | | Impact Coefficient | | | | Dist.-Ft. | |
|------------------|-----------------------|---------------------|----------------|---------------|------------------|---------------|----------------------------|-----------------------------|----------------------------|--------------------|------|------|------|--------------|--------------|
| | | at A | at B | at C | in AB at B | in BC at B | in AB at X | at B | in BC at X' | I | II | III | IV | X | X' |
| 60 | 24.0 | 42.9 | 65.0 | 49.4 | -48.9 | 57.5 | 169.7 | -233.4 | 289.7 | .300 | .300 | .300 | .270 | 8.4 | 23.2 |
| 70 | 28.0 | 45.6 | 67.2 | 52.3 | -51.7 | 60.3 | 216.9 | -280.3 | 367.9 | .300 | .300 | .299 | .256 | 10.1 | 25.5 |
| 80 | 32.0 | 48.4 | 68.7 | 54.5 | -53.7 | 62.2 | 266.2 | -336.9 | 449.8 | .300 | .300 | .289 | .244 | 11.7 | 29.1 |
| 90 | 36.0 | 50.7 | 69.6 | 56.3 | -56.1 | 63.7 | 316.7 | -393.0 | 532.7 | .300 | .294 | .279 | .233 | 13.5 | 32.7 |
| 100 | 40.0 | 52.7 | 70.4 | 57.8 | -58.0 | 64.7 | 375.9 | -448.0 | 616.3 | .300 | .286 | .270 | .222 | 16.5 | 36.3 |
| 110 | 44.0 | 54.3 | 72.2 | 59.0 | -59.6 | 65.6 | 435.1 | -502.1 | 700.5 | .296 | .278 | .262 | .213 | 18.2 | 39.8 |
| 120 | 48.0 | 55.7 | 76.4 | 60.1 | -60.8 | 66.3 | 494.8 | -555.6 | 785.0 | .289 | .270 | .254 | .204 | 19.9 | 43.3 |
| 130 | 52.0 | 56.9 | 80.5 | 61.0 | -61.8 | 66.9 | 554.9 | -612.7 | 869.8 | .282 | .263 | .246 | .196 | 21.7 | 46.9 |
| 140 | 56.0 | 57.9 | 84.6 | 61.7 | -62.7 | 67.3 | 615.2 | -691.2 | 954.9 | .276 | .256 | .239 | .189 | 23.4 | 50.4 |
| 150 | 60.0 | 58.8 | 88.8 | 62.4 | -63.4 | 67.7 | 675.8 | -774.2 | 1040.1 | .270 | .250 | .233 | .182 | 25.2 | 53.9 |
| 160 | 64.0 | 59.6 | 92.9 | 63.0 | -64.1 | 68.1 | 736.5 | -861.7 | 1125.5 | .265 | .244 | .226 | .175 | 26.9 | 57.4 |
| 170 | 68.0 | 60.3 | 97.0 | 63.5 | -64.6 | 68.4 | 797.4 | -953.6 | 1211.0 | .259 | .238 | .220 | .169 | 28.7 | 60.9 |
| 180 | 72.0 | 60.9 | 101.2 | 64.0 | -65.1 | 68.6 | 858.4 | -1050.0 | 1296.6 | .254 | .233 | .215 | .164 | 30.4 | 64.4 |
| 190 | 76.0 | 61.5 | 105.3 | 64.4 | -65.5 | 69.6 | 919.5 | -1150.9 | 1382.2 | .249 | .227 | .209 | .159 | 32.2 | 68.0 |
| 200 | 80.0 | 62.0 | 109.4 | 64.8 | -65.9 | 71.9 | 980.7 | -1256.3 | 1468.0 | .244 | .222 | .204 | .154 | 34.0 | 71.5 |
| 210 | 84.0 | 62.5 | 113.6 | 65.1 | -66.2 | 74.2 | 1042.0 | -1366.1 | 1553.8 | .239 | .217 | .199 | .149 | 35.7 | 75.0 |
| 220 | 88.0 | 62.9 | 117.7 | 65.4 | -66.5 | 76.5 | 1103.3 | -1480.5 | 1639.7 | .235 | .213 | .195 | .145 | 37.5 | 78.5 |
| 230 | 92.0 | 63.3 | 121.8 | 65.7 | -68.3 | 78.7 | 1164.7 | -1599.3 | 1725.6 | .230 | .208 | .190 | .141 | 39.3 | 82.0 |
| 240 | 96.0 | 63.7 | 126.0 | 66.0 | -70.2 | 81.0 | 1226.1 | -1722.6 | 1811.6 | .226 | .204 | .186 | .137 | 41.1 | 85.5 |
| Impact | | I | IV | III | I | III | I | II | III | | | | | | |
| Dead Load | | .2813 x WL | 1.6146 x WL | .6042 x WL | -.7188 x WL | .8958 x WL | .0396 x WL ² | -.2188 x WL ² | .1825 x WL ² | | | | | .2813 x L | .8958 x L |

TABLE 2.6

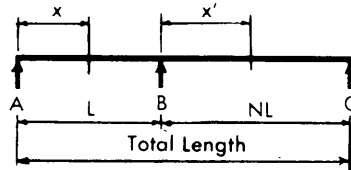
Two-span continuous beam.
 Constant moment of inertia.
 AASHO HS20-44 loading.



| Total Length Ft. | Short Span Length "L" | Max. Reaction Kips. | | | Max. Shear Kips. | | Max. Moment Kip.-ft. | | | Impact Coefficient | | | | Dist.-Ft. | |
|------------------|-----------------------|---------------------|----------------|---------------|------------------|---------------|----------------------------|-----------------------------|----------------------------|--------------------|------|------|------|--------------|--------------|
| | | at A | at B | at C | in AB at B | in BC at B | in AB at X | at B | in BC at X' | I | II | III | IV | X | X' |
| 60 | 23.1 | 42.2 | 65.6 | 49.8 | -48.1 | 58.1 | 159.8 | -246.0 | 298.3 | .300 | .300 | .300 | .270 | 10.4 | 23.8 |
| 70 | 26.9 | 45.0 | 67.8 | 52.6 | -51.1 | 60.8 | 205.2 | -297.4 | 379.6 | .300 | .300 | .297 | .256 | 9.6 | 26.2 |
| 80 | 30.8 | 47.7 | 69.2 | 54.8 | -53.2 | 62.7 | 252.5 | -357.5 | 463.3 | .300 | .300 | .287 | .244 | 11.2 | 29.9 |
| 90 | 34.6 | 50.1 | 70.4 | 56.6 | -55.2 | 64.0 | 301.1 | -416.2 | 548.0 | .300 | .294 | .277 | .233 | 12.9 | 33.6 |
| 100 | 38.5 | 52.1 | 71.4 | 58.1 | -57.2 | 65.1 | 355.8 | -473.7 | 633.3 | .300 | .286 | .268 | .222 | 15.9 | 37.3 |
| 110 | 42.3 | 53.7 | 73.0 | 59.3 | -58.9 | 65.9 | 413.0 | -530.5 | 719.2 | .299 | .278 | .259 | .213 | 17.5 | 40.9 |
| 120 | 46.2 | 55.2 | 77.2 | 60.3 | -60.2 | 66.6 | 470.6 | -586.6 | 805.5 | .292 | .270 | .251 | .204 | 19.2 | 44.6 |
| 130 | 50.0 | 56.4 | 81.4 | 61.2 | -61.2 | 67.1 | 528.6 | -642.2 | 892.1 | .286 | .263 | .244 | .196 | 20.9 | 48.2 |
| 140 | 53.8 | 57.4 | 85.5 | 61.9 | -62.1 | 67.6 | 586.9 | -710.0 | 978.9 | .280 | .256 | .237 | .189 | 22.6 | 51.8 |
| 150 | 57.7 | 58.4 | 89.7 | 62.6 | -62.9 | 67.9 | 645.4 | -795.5 | 1065.8 | .274 | .250 | .230 | .182 | 24.2 | 55.4 |
| 160 | 61.5 | 59.2 | 93.9 | 63.2 | -63.6 | 68.3 | 704.0 | -885.7 | 1152.9 | .268 | .244 | .224 | .175 | 25.9 | 59.1 |
| 170 | 65.4 | 59.9 | 98.1 | 63.7 | -64.2 | 68.5 | 762.8 | -980.5 | 1240.2 | .263 | .238 | .218 | .169 | 27.6 | 62.7 |
| 180 | 69.2 | 60.6 | 102.3 | 64.1 | -64.7 | 68.8 | 821.8 | -1079.9 | 1327.5 | .257 | .233 | .212 | .164 | 29.3 | 66.3 |
| 190 | 73.1 | 61.2 | 106.4 | 64.5 | -65.1 | 70.6 | 880.8 | -1184.0 | 1414.9 | .252 | .227 | .207 | .159 | 31.1 | 69.9 |
| 200 | 76.9 | 61.7 | 110.6 | 64.9 | -65.5 | 72.9 | 940.0 | -1292.7 | 1502.4 | .248 | .222 | .202 | .154 | 32.8 | 73.5 |
| 210 | 80.8 | 62.2 | 114.8 | 65.2 | -65.9 | 75.3 | 999.2 | -1406.0 | 1590.0 | .243 | .217 | .197 | .149 | 34.5 | 77.1 |
| 220 | 84.6 | 62.6 | 119.0 | 65.5 | -66.3 | 77.6 | 1058.5 | -1524.0 | 1677.6 | .239 | .213 | .192 | .145 | 36.2 | 80.7 |
| 230 | 88.5 | 63.0 | 123.2 | 65.8 | -68.2 | 80.0 | 1117.8 | -1646.6 | 1765.2 | .234 | .208 | .188 | .141 | 37.9 | 84.3 |
| 240 | 92.3 | 63.4 | 127.3 | 66.1 | -70.0 | 82.3 | 1177.2 | -1773.9 | 1852.9 | .230 | .204 | .183 | .137 | 39.6 | 87.9 |
| Impact | | I | IV | III | I | III | I | II | III | | | | | | |
| Dead Load | | .2550 x wL | 1.6981 x wL | .6469 x wL | -.7450 x wL | .9531 x wL | .0325 x wL ² | -.2450 x wL ² | .2092 x wL ² | | | | | .2550 x L | .9531 x L |

TABLE 2.7

Two-span continuous beam.
 Constant moment of inertia.
 AASHO HS20-44 loading.

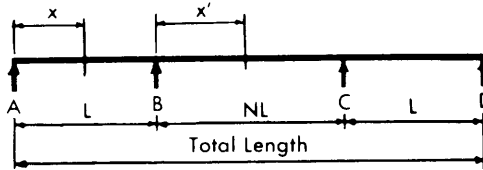


| Total Length Ft. | Short Span Length "L" | Max. Reaction Kips. | | | Max. Shear Kips. | | Max. Moment Kip.-ft. | | | Impact Coefficient | | | | Dist.-Ft. | |
|------------------|-----------------------|---------------------|----------------|---------------|------------------|----------------|----------------------------|-----------------------------|----------------------------|--------------------|------|------|------|--------------|---------------|
| | | at A | at B | at C | in AB at B | in BC at B | in AB at X | at B | in BC at X' | I | II | III | IV | X | X' |
| 60 | 22.2 | 41.6 | 66.2 | 50.1 | -47.4 | 58.6 | 154.7 | -258.1 | 306.2 | .300 | .300 | .300 | .270 | 10.0 | 24.4 |
| 70 | 25.9 | 44.5 | 68.3 | 52.9 | -50.4 | 61.2 | 194.3 | -314.3 | 390.3 | .300 | .300 | .296 | .256 | 9.2 | 26.9 |
| 80 | 29.6 | 47.0 | 70.1 | 55.1 | -52.6 | 63.0 | 239.7 | -377.0 | 475.6 | .300 | .300 | .285 | .244 | 10.8 | 30.7 |
| 90 | 33.3 | 49.4 | 71.5 | 56.9 | -54.4 | 64.4 | 286.5 | -438.1 | 561.9 | .300 | .294 | .275 | .233 | 12.4 | 34.5 |
| 100 | 37.0 | 51.5 | 72.4 | 58.3 | -56.5 | 65.4 | 337.0 | -498.2 | 648.9 | .300 | .286 | .266 | .222 | 15.3 | 38.2 |
| 110 | 40.7 | 53.2 | 73.8 | 59.5 | -58.1 | 66.2 | 392.2 | -557.5 | 736.4 | .300 | .278 | .257 | .213 | 16.9 | 42.0 |
| 120 | 44.4 | 54.6 | 78.1 | 60.5 | -59.5 | 66.8 | 447.9 | -616.0 | 824.3 | .295 | .270 | .249 | .204 | 18.5 | 45.7 |
| 130 | 48.1 | 55.9 | 82.3 | 61.4 | -60.6 | 67.3 | 504.0 | -674.1 | 912.4 | .289 | .263 | .242 | .196 | 20.1 | 49.4 |
| 140 | 51.9 | 57.0 | 86.5 | 62.1 | -61.6 | 67.8 | 560.3 | -731.8 | 1000.8 | .283 | .256 | .235 | .189 | 21.8 | 53.2 |
| 150 | 55.6 | 57.9 | 90.8 | 62.7 | -62.4 | 68.1 | 616.9 | -818.0 | 1089.4 | .277 | .250 | .228 | .182 | 23.4 | 56.9 |
| 160 | 59.3 | 58.8 | 95.0 | 63.3 | -63.1 | 68.4 | 673.6 | -911.0 | 1178.1 | .271 | .244 | .221 | .175 | 25.0 | 60.6 |
| 170 | 63.0 | 59.5 | 99.2 | 63.8 | -63.7 | 68.7 | 730.5 | -1008.8 | 1266.9 | .266 | .238 | .215 | .169 | 26.7 | 64.3 |
| 180 | 66.7 | 60.2 | 103.5 | 64.3 | -64.2 | 69.1 | 787.5 | -1111.4 | 1355.8 | .261 | .233 | .210 | .164 | 28.3 | 68.0 |
| 190 | 70.4 | 60.8 | 107.7 | 64.7 | -64.7 | 71.5 | 844.6 | -1218.8 | 1444.8 | .256 | .227 | .204 | .159 | 30.0 | 71.7 |
| 200 | 74.1 | 61.4 | 111.9 | 65.0 | -65.1 | 73.9 | 901.8 | -1331.0 | 1533.9 | .251 | .222 | .199 | .154 | 31.6 | 75.4 |
| 210 | 77.8 | 61.9 | 116.2 | 65.4 | -65.5 | 76.3 | 959.1 | -1448.0 | 1623.1 | .247 | .217 | .194 | .149 | 33.3 | 79.1 |
| 220 | 81.5 | 62.3 | 120.4 | 65.7 | -66.3 | 78.7 | 1016.5 | -1569.9 | 1712.2 | .242 | .213 | .190 | .145 | 34.9 | 82.8 |
| 230 | 85.2 | 62.7 | 124.6 | 65.9 | -68.2 | 81.1 | 1073.9 | -1696.5 | 1801.5 | .238 | .208 | .185 | .141 | 36.6 | 86.5 |
| 240 | 88.9 | 63.1 | 128.8 | 66.7 | -70.0 | 83.5 | 1131.3 | -1827.9 | 1890.8 | .234 | .204 | .181 | .137 | 38.2 | 90.2 |
| Impact | | I | IV | III | I | III | I | II | III | | | | | | |
| Dead Load | | .2263 x wL | 1.7848 x wL | .6890 x wL | -.7738 x wL | 1.0110 x wL | .0256 x wL ² | -.2737 x wL ² | .2373 x wL ² | | | | | .2263 x L | 1.0110 x L |

TABLE 3.0

Symmetrical three-span continuous beam.
 Constant moment of inertia.
 AASHO HS20-44 loading.

N=1.0

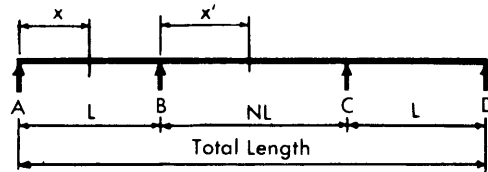


| Total Length Ft. | Exter. Span Length "L" | Max. Reaction Kips. | | Max. Shear Kips. | | Max. Moment Kip.-ft. | | | Impact Coefficient | | | | Dist.-Ft. | |
|------------------|------------------------|---------------------|----------------|------------------|-----------------|----------------------|-----------------------------|----------------------------|--------------------|------|------|------|--------------|--------------|
| | | at A | at B | in AB at B | in BC at B or C | in AB at X | at B | in BC at X' | I | II | III | IV | X | X' |
| 90 | 30.0 | 46.2 | 62.3 | -53.0 | 49.6 | 228.1 | -184.4 | 179.6 | .300 | .300 | .300 | .270 | 10.6 | 14.0 |
| 105 | 35.0 | 49.3 | 64.7 | -56.5 | 53.1 | 286.6 | -219.5 | 231.6 | .300 | .300 | .300 | .256 | 12.6 | 16.0 |
| 120 | 40.0 | 51.8 | 66.4 | -59.0 | 55.7 | 352.4 | -254.2 | 285.9 | .300 | .300 | .300 | .244 | 16.0 | 18.5 |
| 135 | 45.0 | 53.9 | 67.5 | -60.8 | 57.8 | 422.2 | -299.2 | 342.1 | .294 | .294 | .294 | .233 | 18.0 | 21.0 |
| 150 | 50.0 | 55.5 | 68.4 | -62.3 | 59.4 | 492.8 | -351.1 | 399.7 | .286 | .286 | .286 | .222 | 20.1 | 23.5 |
| 165 | 55.0 | 56.9 | 69.1 | -63.4 | 60.8 | 564.0 | -406.8 | 458.2 | .278 | .278 | .278 | .213 | 22.2 | 26.0 |
| 180 | 60.0 | 58.1 | 72.1 | -64.3 | 61.9 | 635.7 | -466.2 | 517.5 | .270 | .270 | .270 | .204 | 24.2 | 28.5 |
| 195 | 65.0 | 59.2 | 75.9 | -65.1 | 62.8 | 707.6 | -529.3 | 577.3 | .263 | .263 | .263 | .196 | 26.3 | 31.0 |
| 210 | 70.0 | 60.0 | 79.8 | -65.7 | 63.6 | 779.9 | -596.1 | 637.6 | .256 | .256 | .256 | .189 | 28.4 | 33.5 |
| 225 | 75.0 | 60.8 | 83.6 | -66.2 | 64.2 | 852.3 | -666.7 | 698.2 | .250 | .250 | .250 | .182 | 30.5 | 36.0 |
| 240 | 80.0 | 61.5 | 87.4 | -66.6 | 64.8 | 924.9 | -741.0 | 759.2 | .244 | .244 | .244 | .175 | 32.6 | 38.5 |
| 255 | 85.0 | 62.1 | 91.3 | -67.0 | 65.3 | 997.6 | -819.1 | 820.3 | .238 | .238 | .238 | .169 | 34.8 | 41.0 |
| 270 | 90.0 | 62.6 | 95.1 | -67.4 | 65.7 | 1070.5 | -900.9 | 881.7 | .233 | .233 | .233 | .164 | 36.9 | 43.5 |
| 285 | 95.0 | 63.1 | 99.0 | -67.7 | 66.1 | 1143.4 | -986.4 | 943.2 | .227 | .227 | .227 | .159 | 39.0 | 46.0 |
| 300 | 100.0 | 63.6 | 102.8 | -67.9 | 66.4 | 1216.5 | -1075.6 | 1004.9 | .222 | .222 | .222 | .154 | 41.1 | 48.5 |
| 315 | 105.0 | 64.0 | 106.6 | -68.2 | 66.7 | 1289.6 | -1168.6 | 1066.8 | .217 | .217 | .217 | .149 | 43.3 | 51.0 |
| 330 | 110.0 | 64.3 | 110.5 | -69.4 | 67.1 | 1362.7 | -1265.3 | 1128.7 | .213 | .213 | .213 | .145 | 45.4 | 53.5 |
| 345 | 115.0 | 64.6 | 114.3 | -71.4 | 68.9 | 1436.0 | -1365.8 | 1190.7 | .208 | .208 | .208 | .141 | 47.5 | 56.0 |
| 360 | 120.0 | 64.9 | 118.2 | -73.4 | 70.8 | 1509.2 | -1469.9 | 1252.8 | .204 | .204 | .204 | .137 | 49.6 | 58.5 |
| Impact | | I | IV | I | III | I | II | III | | | | | | |
| Dead Load | | .4000 x wL | 1.1000 x wL | -.6000 x wL | .5000 x wL | .0800 x wL | -.1000 x wL ² | .0250 x wL ² | | | | | .4000 x L | .5000 x L |

TABLE 3.1

Symmetrical three-span continuous beam.
 Constant moment of inertia.
 AASHO HS20-44 loading.

N=1.1

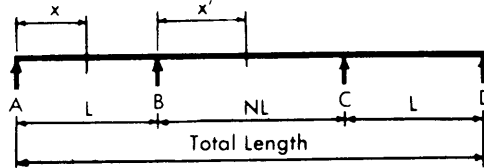


| Total Length Ft. | Exter. Span Length "L" | Max. Reaction Kips. | | Max. Shear Kips. | | Max. Moment Kip.-ft. | | | Impact Coefficient | | | | Dist.-Ft. | |
|------------------|------------------------|---------------------|----------------|------------------|-----------------|----------------------------|-----------------------------|----------------------------|--------------------|------|------|------|------------|--------------|
| | | at A | at B | in AB at B | in BC at B or C | in AB at X | at B | in BC at X' | I | II | III | IV | X | X' |
| 90 | 29.0 | 45.7 | 62.2 | -52.0 | 51.1 | 219.1 | -185.2 | 195.6 | .300 | .300 | .300 | .269 | 10.3 | 14.5 |
| 105 | 33.9 | 48.8 | 64.6 | -55.7 | 54.4 | 275.9 | -219.4 | 250.4 | .300 | .300 | .300 | .255 | 12.2 | 17.1 |
| 120 | 38.7 | 51.4 | 66.2 | -58.3 | 56.9 | 338.2 | -254.0 | 308.0 | .300 | .300 | .298 | .242 | 15.6 | 19.8 |
| 135 | 43.5 | 53.4 | 67.3 | -60.2 | 58.8 | 406.2 | -302.8 | 367.4 | .297 | .293 | .289 | .231 | 17.5 | 22.5 |
| 150 | 48.4 | 55.2 | 68.2 | -61.7 | 60.4 | 475.0 | -355.4 | 428.0 | .288 | .284 | .281 | .221 | 19.5 | 25.1 |
| 165 | 53.2 | 56.6 | 68.8 | -62.9 | 61.6 | 544.3 | -411.8 | 489.7 | .281 | .276 | .272 | .211 | 21.6 | 27.8 |
| 180 | 58.1 | 57.8 | 72.5 | -63.8 | 62.7 | 614.2 | -472.1 | 552.0 | .273 | .269 | .265 | .202 | 23.6 | 30.4 |
| 195 | 62.9 | 58.9 | 76.3 | -64.6 | 63.5 | 684.3 | -536.1 | 614.9 | .266 | .262 | .257 | .194 | 25.6 | 33.1 |
| 210 | 67.7 | 59.8 | 80.2 | -65.3 | 64.2 | 754.7 | -603.9 | 678.3 | .259 | .255 | .251 | .187 | 27.7 | 35.8 |
| 225 | 72.6 | 60.6 | 84.1 | -65.8 | 64.8 | 825.3 | -675.5 | 741.9 | .253 | .248 | .244 | .180 | 29.7 | 38.4 |
| 240 | 77.4 | 61.2 | 87.9 | -66.3 | 65.4 | 896.1 | -750.9 | 805.9 | .247 | .242 | .238 | .174 | 31.8 | 41.1 |
| 255 | 82.3 | 61.9 | 91.8 | -66.7 | 65.8 | 967.0 | -830.1 | 870.1 | .241 | .237 | .232 | .168 | 33.8 | 43.7 |
| 270 | 87.1 | 62.4 | 95.7 | -67.1 | 66.2 | 1038.1 | -913.2 | 934.5 | .236 | .231 | .226 | .162 | 35.9 | 46.4 |
| 285 | 91.9 | 62.9 | 99.5 | -67.4 | 66.6 | 1109.2 | -999.9 | 999.1 | .230 | .226 | .221 | .157 | 38.0 | 49.1 |
| 300 | 96.8 | 63.4 | 103.4 | -67.7 | 66.9 | 1180.5 | -1090.5 | 1063.8 | .225 | .221 | .216 | .152 | 40.0 | 51.7 |
| 315 | 101.6 | 63.8 | 107.3 | -67.9 | 67.2 | 1251.8 | -1184.9 | 1128.6 | .221 | .216 | .211 | .148 | 42.1 | 54.4 |
| 330 | 106.5 | 64.1 | 111.2 | -68.7 | 68.5 | 1323.1 | -1283.1 | 1193.6 | .216 | .211 | .207 | .143 | 44.2 | 57.1 |
| 345 | 111.3 | 64.5 | 115.0 | -70.6 | 70.4 | 1394.5 | -1385.1 | 1258.6 | .212 | .207 | .202 | .139 | 46.2 | 59.7 |
| 360 | 116.1 | 64.8 | 118.9 | -72.6 | 72.3 | 1466.0 | -1490.9 | 1323.7 | .207 | .202 | .198 | .136 | 48.3 | 62.4 |
| Impact | | I | IV | I | III | I | II | III | | | | | | |
| Dead Load | | .3900 x wL | 1.1600 x wL | -.6100 x wL | .5500 x wL | .0761 x wL ² | -.1100 x wL ² | .0413 x wL ² | | | | | .3900 L | .5500 x L |

TABLE 3.2

Symmetrical three-span continuous beam.
 Constant moment of inertia.
 AASHO HS20-44 loading.

N=1.2



| Total Length Ft. | Exter. Span Length "L" | Max. Reaction Kips. | | Max. Shear Kips. | | Max. Moment Kip.-ft. | | | Impact Coefficient | | | | Dist.-Ft. | |
|------------------|------------------------|---------------------|----------------|------------------|-----------------|----------------------------|-----------------------------|----------------------------|--------------------|------|------|------|--------------|--------------|
| | | at A | at B | in AB at B | in BC at B or C | in AB at X | at B | in BC at X' | I | II | III | IV | X | X' |
| 90 | 28.1 | 45.1 | 62.3 | -51.1 | 52.3 | 210.5 | -188.8 | 209.9 | .300 | .300 | .300 | .268 | 10.0 | 15.4 |
| 105 | 32.8 | 48.3 | 64.6 | -54.8 | 55.5 | 265.7 | -223.7 | 267.7 | .300 | .300 | .300 | .254 | 11.8 | 18.2 |
| 120 | 37.5 | 50.9 | 66.2 | -57.5 | 57.9 | 324.6 | -258.4 | 328.2 | .300 | .300 | .294 | .241 | 15.1 | 21.0 |
| 135 | 42.2 | 53.0 | 67.3 | -59.6 | 59.7 | 390.8 | -308.2 | 390.5 | .299 | .292 | .285 | .230 | 17.0 | 23.9 |
| 150 | 46.9 | 54.8 | 68.2 | -61.1 | 61.2 | 457.8 | -362.0 | 454.0 | .291 | .283 | .276 | .219 | 19.0 | 26.7 |
| 165 | 51.6 | 56.2 | 69.0 | -62.4 | 62.4 | 525.4 | -419.6 | 518.5 | .283 | .275 | .268 | .210 | 21.0 | 29.5 |
| 180 | 56.3 | 57.5 | 72.9 | -63.4 | 63.3 | 593.5 | -481.1 | 583.7 | .276 | .268 | .260 | .201 | 23.0 | 32.3 |
| 195 | 60.9 | 58.6 | 76.8 | -64.2 | 64.1 | 661.9 | -546.5 | 649.4 | .269 | .260 | .252 | .193 | 24.9 | 35.1 |
| 210 | 65.6 | 59.5 | 80.8 | -64.9 | 64.8 | 730.5 | -615.8 | 715.5 | .262 | .254 | .245 | .186 | 26.9 | 37.9 |
| 225 | 70.3 | 60.3 | 84.7 | -65.5 | 65.4 | 799.4 | -689.0 | 782.0 | .256 | .247 | .239 | .179 | 28.9 | 40.7 |
| 240 | 75.0 | 61.0 | 88.6 | -66.0 | 65.9 | 868.5 | -766.1 | 848.7 | .250 | .241 | .233 | .172 | 30.9 | 43.5 |
| 255 | 79.7 | 61.6 | 92.5 | -66.4 | 66.3 | 937.7 | -847.1 | 915.7 | .244 | .235 | .227 | .166 | 32.9 | 46.3 |
| 270 | 84.4 | 62.2 | 96.4 | -66.8 | 66.7 | 1007.0 | -932.0 | 982.9 | .239 | .230 | .221 | .161 | 35.0 | 49.2 |
| 285 | 89.1 | 62.7 | 100.3 | -67.1 | 67.0 | 1076.4 | -1020.8 | 1050.2 | .234 | .224 | .216 | .156 | 37.0 | 52.0 |
| 300 | 93.8 | 63.2 | 104.2 | -67.4 | 67.3 | 1145.8 | -1113.5 | 1117.7 | .229 | .219 | .211 | .151 | 39.0 | 54.8 |
| 315 | 98.4 | 63.6 | 108.1 | -67.6 | 67.9 | 1215.4 | -1210.1 | 1185.3 | .224 | .214 | .206 | .146 | 41.0 | 57.6 |
| 330 | 103.1 | 63.9 | 112.0 | -68.1 | 69.9 | 1285.0 | -1310.6 | 1252.9 | .219 | .210 | .201 | .142 | 43.0 | 60.4 |
| 345 | 107.8 | 64.3 | 115.9 | -70.1 | 71.9 | 1354.7 | -1414.9 | 1320.7 | .215 | .205 | .197 | .138 | 45.0 | 63.2 |
| 360 | 112.5 | 64.6 | 119.9 | -72.0 | 73.9 | 1424.4 | -1523.2 | 1388.6 | .211 | .201 | .192 | .134 | 47.1 | 66.0 |
| Impact | | I | IV | I | III | I | II | III | | | | | | |
| Dead Load | | .3782 x wL | 1.2218 x wL | -.6218 x wL | .6000 x wL | .0715 x wL ² | -.1218 x wL ² | .0582 x wL ² | | | | | .3782 x L | .6000 x L |

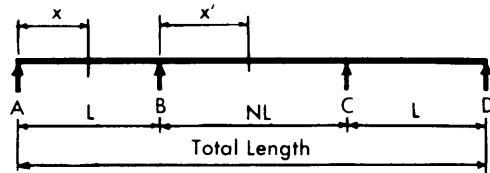
TABLE 3.3

Symmetrical three-span continuous beam.

Constant moment of inertia.

AASHO HS20-44 loading.

N=1.3



| Total Length Ft. | Exter. Span Length "L" | Max. Reaction Kips. | | Max. Shear Kips. | | Max. Moment Kip.-ft. | | | Impact Coefficient | | | | Dist.-Ft. | |
|------------------|------------------------|---------------------|----------------|------------------|-----------------|----------------------------|-----------------------------|----------------------------|--------------------|------|------|------|--------------|--------------|
| | | at A | at B | in AB at B | in BC at B or C | in AB at X | at B | in BC at X' | I | II | III | IV | X | X' |
| 90 | 27.3 | 44.7 | 62.6 | -50.4 | 53.4 | 202.3 | -192.8 | 223.1 | .300 | .300 | .300 | .266 | 9.7 | 16.3 |
| 105 | 31.8 | 47.8 | 64.8 | -54.0 | 56.4 | 255.8 | -228.3 | 283.7 | .300 | .300 | .300 | .252 | 11.5 | 19.3 |
| 120 | 36.4 | 50.4 | 66.4 | -56.8 | 58.7 | 311.5 | -264.0 | 346.9 | .300 | .300 | .290 | .240 | 14.7 | 22.2 |
| 135 | 40.9 | 52.6 | 67.5 | -58.9 | 60.5 | 376.0 | -315.1 | 411.8 | .300 | .291 | .281 | .228 | 16.6 | 25.2 |
| 150 | 45.5 | 54.4 | 68.3 | -60.6 | 61.9 | 441.3 | -370.3 | 478.0 | .293 | .282 | .272 | .218 | 18.5 | 28.1 |
| 165 | 50.0 | 55.9 | 69.5 | -61.9 | 63.0 | 507.3 | -429.4 | 545.0 | .286 | .274 | .263 | .208 | 20.4 | 31.1 |
| 180 | 54.5 | 57.2 | 73.5 | -62.9 | 63.9 | 573.6 | -492.6 | 612.8 | .278 | .266 | .255 | .200 | 22.3 | 34.0 |
| 195 | 59.1 | 58.2 | 77.4 | -63.8 | 64.6 | 640.4 | -559.8 | 681.1 | .272 | .259 | .248 | .192 | 24.3 | 37.0 |
| 210 | 63.6 | 59.2 | 81.4 | -64.5 | 65.3 | 707.3 | -631.1 | 749.8 | .265 | .252 | .241 | .184 | 26.2 | 39.9 |
| 225 | 68.2 | 60.0 | 85.4 | -65.1 | 65.8 | 774.5 | -706.3 | 818.8 | .259 | .246 | .234 | .177 | 28.2 | 42.9 |
| 240 | 72.7 | 60.7 | 89.3 | -65.6 | 66.3 | 841.9 | -785.6 | 888.1 | .253 | .240 | .228 | .171 | 30.1 | 45.8 |
| 255 | 77.3 | 61.4 | 93.3 | -66.1 | 66.7 | 909.4 | -868.9 | 957.6 | .247 | .234 | .222 | .165 | 32.1 | 48.8 |
| 270 | 81.8 | 62.0 | 97.2 | -66.5 | 67.0 | 977.1 | -956.2 | 1027.3 | .242 | .228 | .216 | .160 | 34.1 | 51.7 |
| 285 | 86.4 | 62.5 | 101.2 | -66.8 | 67.3 | 1044.8 | -1047.6 | 1097.2 | .237 | .223 | .211 | .154 | 36.0 | 54.7 |
| 300 | 90.9 | 62.9 | 105.2 | -67.1 | 67.6 | 1112.6 | -1142.9 | 1167.2 | .232 | .218 | .206 | .150 | 38 | 57.7 |
| 315 | 95.5 | 63.4 | 109.1 | -67.4 | 69.3 | 1180.5 | -1242.5 | 1237.3 | .227 | .213 | .201 | .145 | 40.0 | 60.6 |
| 330 | 100.0 | 63.8 | 113.1 | -67.7 | 71.3 | 1248.4 | -1346.0 | 1307.5 | .222 | .208 | .196 | .141 | 41.9 | 63.6 |
| 345 | 104.5 | 64.1 | 117.0 | -69.6 | 73.4 | 1316.4 | -1453.4 | 1377.8 | .218 | .204 | .192 | .137 | 43.9 | 66.5 |
| 360 | 109.1 | 64.4 | 121.0 | -71.5 | 75.4 | 1384.5 | -1564.9 | 1448.2 | .214 | .200 | .187 | .133 | 45.9 | 69.5 |
| Impact | | I | IV | I | III | I | II | III | | | | | | |
| Dead Load | | .3645 x wL | 1.2855 x wL | -.6355 x wL | .6500 x wL | .0664 x wL ² | -.1355 x wL ² | .0758 x wL ² | | | | | .3645 x L | .6500 x L |

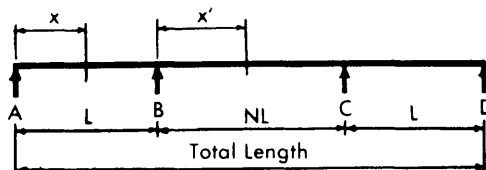
TABLE 3.4

Symmetrical three-span continuous beam.

Constant moment of inertia.

AASHO HS20-44 loading.

N=1.4



| Total Length Ft. | Exter. Span Length "L" | Max. Reaction Kips. | | Max. Shear Kips. | | Max. Moment Kip.-ft. | | | Impact Coefficient | | | | Dist.-Ft. | |
|------------------|------------------------|---------------------|----------------|------------------|-----------------|----------------------------|-----------------------------|----------------------------|--------------------|------|------|------|--------------|--------------|
| | | at A | at B | in AB at B | in BC at B or C | in AB at X | at B | in BC at X' | I | II | III | IV | X | X' |
| 90 | 26.5 | 44.3 | 62.9 | -49.7 | 54.3 | 194.4 | -196.9 | 235.4 | .300 | .300 | .300 | .265 | 9.4 | 17.1 |
| 105 | 30.9 | 47.3 | 65.1 | -53.2 | 57.3 | 246.4 | -233.2 | 298.5 | .300 | .300 | .297 | .251 | 11.1 | 20.2 |
| 120 | 35.3 | 50.0 | 66.7 | -56.1 | 59.5 | 300.3 | -270.6 | 364.1 | .300 | .299 | .287 | .238 | 13.0 | 23.3 |
| 135 | 39.7 | 52.2 | 67.8 | -58.3 | 61.1 | 361.8 | -323.2 | 431.5 | .300 | .290 | .277 | .227 | 16.2 | 26.4 |
| 150 | 44.1 | 54.0 | 68.6 | -60.0 | 62.5 | 425.5 | -380.0 | 500.1 | .296 | .281 | .268 | .217 | 18.0 | 29.5 |
| 165 | 48.5 | 55.5 | 70.1 | -61.3 | 63.5 | 489.8 | -441.0 | 569.5 | .288 | .273 | .259 | .207 | 19.9 | 32.6 |
| 180 | 52.9 | 56.8 | 74.1 | -62.4 | 64.4 | 554.6 | -506.1 | 639.7 | .281 | .265 | .251 | .198 | 21.8 | 35.6 |
| 195 | 57.4 | 57.9 | 78.1 | -63.3 | 65.1 | 619.7 | -575.3 | 710.3 | .274 | .258 | .244 | .190 | 23.6 | 38.7 |
| 210 | 61.8 | 58.9 | 82.1 | -64.1 | 65.7 | 685.1 | -648.9 | 781.4 | .268 | .251 | .236 | .183 | 25.6 | 41.8 |
| 225 | 66.2 | 59.7 | 86.1 | -64.7 | 66.2 | 750.7 | -726.6 | 852.8 | .262 | .245 | .230 | .176 | 27.5 | 44.9 |
| 240 | 70.6 | 60.5 | 90.2 | -65.3 | 66.6 | 816.4 | -808.4 | 924.4 | .256 | .238 | .223 | .170 | 29.4 | 48.0 |
| 255 | 75.0 | 61.1 | 94.2 | -65.7 | 67.0 | 882.3 | -894.4 | 996.3 | .250 | .233 | .217 | .164 | 31.3 | 51.1 |
| 270 | 79.4 | 61.7 | 98.2 | -66.2 | 67.3 | 948.3 | -984.6 | 1068.4 | .245 | .227 | .212 | .158 | 33.2 | 54.2 |
| 285 | 83.8 | 62.3 | 102.2 | -66.5 | 67.6 | 1014.5 | -1079.0 | 1140.6 | .239 | .222 | .206 | .153 | 35.1 | 57.3 |
| 300 | 88.2 | 62.7 | 106.2 | -66.8 | 68.5 | 1080.7 | -1177.5 | 1212.9 | .234 | .217 | .201 | .148 | 37.0 | 60.3 |
| 315 | 92.6 | 63.2 | 110.2 | -67.1 | 70.6 | 1147.0 | -1280.2 | 1285.3 | .230 | .212 | .196 | .144 | 38.9 | 63.4 |
| 330 | 97.1 | 63.6 | 114.2 | -67.5 | 72.7 | 1213.3 | -1387.1 | 1357.9 | .225 | .207 | .192 | .140 | 40.9 | 66.5 |
| 345 | 101.5 | 63.9 | 118.2 | -69.4 | 74.9 | 1279.7 | -1498.2 | 1430.5 | .221 | .203 | .187 | .136 | 42.8 | 69.6 |
| 360 | 105.9 | 64.3 | 122.2 | -71.2 | 77.0 | 1346.2 | -1613.5 | 1503.2 | .217 | .198 | .183 | .132 | 44.7 | 72.7 |
| Impact | | I | IV | I | III | I | II | III | | | | | | |
| Dead Load | | .3490 x wL | 1.3510 x wL | -.6510 x wL | .7000 x wL | .0609 x wL ² | -.1510 x wL ² | .0940 x wL ² | | | | | .3490 x L | .7000 x L |

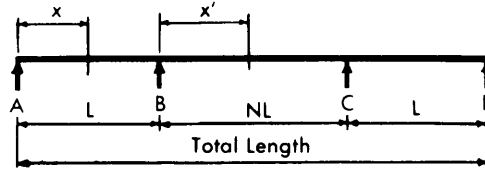
TABLE 3.5

Symmetrical three-span continuous beam.

Constant moment of inertia.

AASHO HS20-44 loading.

N=1.5

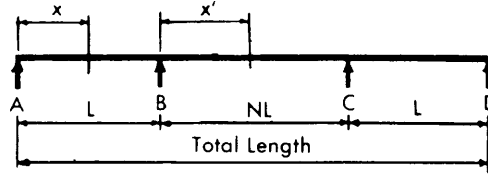


| Total Length Ft. | Exter. Span Length "L" | Max. Reaction Kips. | | Max. Shear Kips. | | Max. Moment Kip.-ft. | | | Impact Coefficient | | | | Dist.-Ft. | |
|------------------|------------------------|---------------------|----------------|------------------|-----------------|----------------------------|-----------------------------|----------------------------|--------------------|------|------|------|--------------|--------------|
| | | at A | at B | in AB at B | in BC at B or C | in AB at X | at B | in BC at X' | I | II | III | IV | X | X' |
| 90 | 25.7 | 43.9 | 63.3 | -49.1 | 55.1 | 186.8 | -201.3 | 246.8 | .300 | .300 | .300 | .264 | 9.1 | 17.9 |
| 105 | 30.0 | 46.8 | 65.5 | -52.4 | 58.0 | 237.4 | -238.3 | 312.2 | .300 | .300 | .294 | .250 | 10.8 | 21.1 |
| 120 | 34.3 | 49.5 | 67.0 | -55.4 | 60.1 | 289.9 | -283.7 | 380.1 | .300 | .298 | .283 | .237 | 12.6 | 24.3 |
| 135 | 38.6 | 51.8 | 68.1 | -57.7 | 61.7 | 348.2 | -333.9 | 449.8 | .300 | .289 | .273 | .226 | 15.7 | 27.5 |
| 150 | 42.9 | 53.6 | 68.9 | -59.4 | 63.0 | 410.3 | -390.9 | 520.6 | .298 | .280 | .264 | .215 | 17.5 | 30.7 |
| 165 | 47.1 | 55.2 | 70.7 | -60.8 | 64.0 | 473.1 | -453.9 | 592.3 | .290 | .272 | .255 | .206 | 19.4 | 34.0 |
| 180 | 51.4 | 56.5 | 74.8 | -62.0 | 64.8 | 536.3 | -521.2 | 664.6 | .283 | .264 | .247 | .197 | 21.2 | 37.2 |
| 195 | 55.7 | 57.6 | 78.9 | -62.9 | 65.5 | 599.9 | -592.9 | 737.4 | .277 | .257 | .240 | .189 | 23.0 | 40.4 |
| 210 | 60.0 | 58.6 | 82.9 | -63.7 | 66.1 | 663.7 | -668.9 | 810.7 | .270 | .250 | .233 | .182 | 24.9 | 43.6 |
| 225 | 64.3 | 59.5 | 87.0 | -64.4 | 66.5 | 727.7 | -749.2 | 884.3 | .264 | .243 | .226 | .175 | 26.8 | 46.8 |
| 240 | 68.6 | 60.2 | 91.1 | -64.9 | 66.9 | 791.9 | -834.0 | 958.1 | .258 | .237 | .219 | .169 | 28.6 | 50.0 |
| 255 | 72.9 | 60.9 | 95.1 | -65.4 | 67.3 | 856.3 | -923.0 | 1032.1 | .253 | .231 | .213 | .163 | 30.5 | 53.2 |
| 270 | 77.1 | 61.5 | 99.2 | -65.9 | 67.6 | 920.8 | -1016.4 | 1106.4 | .247 | .226 | .208 | .157 | 32.3 | 56.5 |
| 285 | 81.4 | 62.0 | 103.3 | -66.2 | 67.9 | 985.4 | -1114.1 | 1180.7 | .242 | .220 | .202 | .152 | 34.2 | 59.7 |
| 300 | 85.7 | 62.5 | 107.3 | -66.6 | 69.8 | 1050.1 | -1216.2 | 1255.2 | .237 | .215 | .197 | .147 | 36.1 | 62.9 |
| 315 | 90.0 | 63.0 | 111.4 | -66.9 | 71.9 | 1114.8 | -1322.7 | 1329.8 | .233 | .211 | .192 | .143 | 38.0 | 66.1 |
| 330 | 94.3 | 63.4 | 115.5 | -67.3 | 74.1 | 1179.6 | -1433.4 | 1404.5 | .228 | .206 | .188 | .139 | 39.8 | 69.3 |
| 345 | 98.6 | 63.7 | 119.5 | -69.2 | 76.3 | 1244.5 | -1548.6 | 1479.3 | .224 | .201 | .183 | .135 | 41.7 | 72.5 |
| 360 | 102.9 | 64.1 | 123.6 | -71.1 | 78.5 | 1309.4 | -1668.0 | 1554.2 | .219 | .197 | .179 | .131 | 43.6 | 75.7 |
| Impact | | I | IV | I | III | I | II | III | | | | | | |
| Dead Load | | .3317 x wL | 1.4183 x wL | -.6683 x wL | .7500 x wL | .0550 x wL ² | -.1682 x wL ² | .1130 x wL ² | | | | | .3317 x L | .7500 x L |

TABLE 3.6

Symmetrical three-span continuous beam.
 Constant moment of inertia.
 AASHO HS20-44 loading.

N=1.6

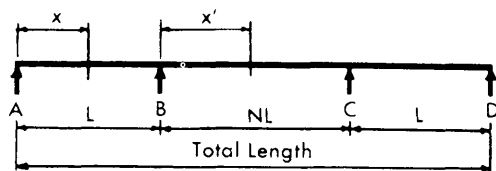


| Total Length Ft. | Exter. Span Length "L" | Max. Reaction Kips. | | Max. Shear Kips. | | Max. Moment Kip.-ft. | | | Impact Coefficient | | | | Dist.-Ft. | |
|------------------|------------------------|---------------------|----------------|------------------|-----------------|----------------------------|-----------------------------|----------------------------|--------------------|------|------|------|--------------|--------------|
| | | at A | at B | in AB at B | in BC at B or C | in AB at X | at B | in BC at X' | I | II | III | IV | X | X' |
| 90 | 25.0 | 43.5 | 63.8 | -48.5 | 55.9 | 179.6 | -205.7 | 257.4 | .300 | .300 | .300 | .263 | 8.8 | 18.6 |
| 105 | 29.2 | 46.3 | 66.0 | -51.6 | 58.6 | 228.8 | -250.3 | 325.0 | .300 | .300 | .291 | .249 | 10.5 | 22.0 |
| 120 | 33.3 | 49.1 | 67.5 | -54.7 | 60.7 | 279.9 | -304.8 | 395.0 | .300 | .297 | .280 | .236 | 12.2 | 25.3 |
| 135 | 37.5 | 51.3 | 68.6 | -57.1 | 62.2 | 335.1 | -357.6 | 466.7 | .300 | .288 | .270 | .225 | 15.3 | 28.6 |
| 150 | 41.7 | 53.2 | 69.3 | -58.9 | 63.4 | 395.8 | -409.1 | 539.6 | .300 | .279 | .261 | .214 | 17.1 | 32.0 |
| 165 | 45.8 | 54.8 | 71.4 | -60.3 | 64.4 | 457.0 | -467.7 | 613.4 | .293 | .271 | .252 | .205 | 18.9 | 35.3 |
| 180 | 50.0 | 56.2 | 75.5 | -61.5 | 65.2 | 518.8 | -537.4 | 687.8 | .286 | .263 | .244 | .196 | 20.7 | 38.6 |
| 195 | 54.2 | 57.3 | 79.6 | -62.5 | 65.8 | 580.8 | -611.6 | 767.7 | .279 | .256 | .236 | .188 | 22.5 | 42.0 |
| 210 | 58.3 | 58.3 | 83.8 | -63.3 | 66.4 | 643.2 | -690.3 | 837.9 | .273 | .249 | .229 | .181 | 24.3 | 45.3 |
| 225 | 62.5 | 59.2 | 87.9 | -64.0 | 66.8 | 705.7 | -773.5 | 913.5 | .267 | .242 | .222 | .174 | 26.1 | 48.6 |
| 240 | 66.7 | 60.0 | 92.0 | -64.6 | 67.2 | 768.5 | -861.3 | 989.4 | .261 | .236 | .216 | .168 | 27.9 | 51.9 |
| 255 | 70.8 | 60.7 | 96.1 | -65.1 | 67.6 | 831.4 | -953.6 | 1065.4 | .255 | .230 | .210 | .162 | 29.7 | 55.3 |
| 270 | 75.0 | 61.3 | 100.3 | -65.6 | 67.9 | 894.4 | -1050.7 | 1141.7 | .250 | .225 | .204 | .156 | 31.6 | 58.6 |
| 285 | 79.2 | 61.8 | 104.4 | -66.0 | 68.7 | 957.5 | -1151.9 | 1218.1 | .245 | .219 | .199 | .151 | 33.4 | 62.0 |
| 300 | 83.3 | 62.3 | 108.5 | -66.3 | 71.0 | 1020.7 | -1257.8 | 1294.6 | .240 | .214 | .194 | .146 | 35.2 | 65.3 |
| 315 | 87.5 | 62.8 | 112.6 | -66.6 | 73.2 | 1083.9 | -1368.3 | 1371.2 | .235 | .209 | .189 | .142 | 37.0 | 68.6 |
| 330 | 91.7 | 63.2 | 116.8 | -67.3 | 75.5 | 1147.2 | -1483.2 | 1447.9 | .231 | .205 | .184 | .138 | 38.9 | 72.0 |
| 345 | 95.8 | 63.6 | 120.9 | -69.2 | 77.7 | 1210.6 | -1602.7 | 1524.7 | .226 | .200 | .180 | .134 | 40.7 | 75.3 |
| 360 | 100.0 | 63.9 | 125.0 | -71.0 | 80.0 | 1274.1 | -1726.7 | 1601.6 | .222 | .196 | .175 | .130 | 42.5 | 78.6 |
| Impact | | I | IV | I | III | I | II | III | | | | | | |
| Dead Load | | .3126 x wL | 1.4874 x wL | -.6874 x wL | .8000 x wL | .0489 x wL ² | -.1874 x wL ² | .1326 x wL ² | | | | | .3126 x L | .8000 x L |

TABLE 3.7

Symmetrical three-span continuous beam.
 Constant moment of inertia.
 AASHO HS20-44 loading.

N=1.7



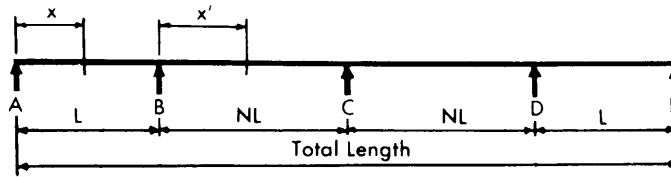
| Total Length Ft. | Exter. Span Length "L" | Max. Reaction Kips. | | Max. Shear Kips. | | Max. Moment Kip.-ft. | | | Impact Coefficient | | | | Dist.-Ft. | |
|------------------|------------------------|---------------------|----------------|------------------|-----------------|----------------------------|-----------------------------|----------------------------|--------------------|------|------|------|--------------|--------------|
| | | at A | at B | in AB at B | in BC at B or C | in AB at X | at B | in BC at X' | I | II | III | IV | X | X' |
| 90 | 24.3 | 43.1 | 64.4 | -47.9 | 56.5 | 172.7 | -210.2 | 267.3 | .300 | .300 | .300 | .262 | 8.5 | 19.3 |
| 105 | 28.4 | 45.8 | 66.6 | -50.8 | 59.2 | 220.5 | -268.2 | 336.9 | .300 | .300 | .289 | .248 | 10.2 | 22.8 |
| 120 | 32.4 | 48.6 | 68.0 | -54.0 | 61.2 | 270.3 | -325.2 | 408.9 | .300 | .296 | .278 | .235 | 11.9 | 26.2 |
| 135 | 36.5 | 50.9 | 69.1 | -56.5 | 62.7 | 322.6 | -380.5 | 482.6 | .300 | .278 | .267 | .224 | 14.9 | 29.7 |
| 150 | 40.5 | 52.8 | 69.8 | -58.3 | 63.8 | 381.8 | -434.4 | 557.4 | .300 | .278 | .258 | .213 | 16.7 | 33.1 |
| 165 | 44.6 | 54.4 | 72.1 | -59.8 | 64.8 | 441.6 | -487.4 | 633.1 | .295 | .270 | .249 | .204 | 18.4 | 36.5 |
| 180 | 48.6 | 55.8 | 76.3 | -61.1 | 65.5 | 501.9 | -554.5 | 709.4 | .288 | .262 | .241 | .195 | 20.2 | 40.0 |
| 195 | 52.7 | 57.0 | 80.4 | -62.1 | 66.1 | 562.6 | -631.4 | 786.2 | .281 | .255 | .233 | .187 | 21.9 | 43.4 |
| 210 | 56.8 | 58.0 | 84.6 | -62.9 | 66.6 | 623.5 | -713.0 | 863.3 | .275 | .248 | .226 | .180 | 23.7 | 46.9 |
| 225 | 60.8 | 58.9 | 88.8 | -63.6 | 67.1 | 684.6 | -799.4 | 940.8 | .269 | .241 | .219 | .173 | 25.4 | 50.3 |
| 240 | 64.9 | 59.7 | 93.0 | -64.3 | 67.5 | 745.9 | -890.4 | 1018.6 | .263 | .235 | .213 | .167 | 27.2 | 53.8 |
| 255 | 68.9 | 60.4 | 97.2 | -64.8 | 67.8 | 807.4 | -986.2 | 1096.5 | .258 | .229 | .206 | .161 | 29.0 | 57.2 |
| 270 | 73.0 | 61.0 | 101.4 | -65.3 | 68.1 | 869.0 | -1086.7 | 1174.6 | .253 | .224 | .201 | .155 | 30.8 | 60.7 |
| 285 | 77.0 | 61.6 | 105.6 | -65.7 | 69.9 | 930.7 | -1191.9 | 1252.9 | .247 | .218 | .195 | .150 | 32.6 | 64.1 |
| 300 | 81.1 | 62.1 | 109.8 | -66.0 | 72.2 | 992.4 | -1301.9 | 1331.3 | .243 | .213 | .190 | .145 | 34.3 | 67.6 |
| 315 | 85.1 | 62.6 | 113.9 | -66.4 | 74.5 | 1054.3 | -1416.5 | 1409.7 | .238 | .208 | .185 | .141 | 36.1 | 71.0 |
| 330 | 89.2 | 63.0 | 118.1 | -67.3 | 76.8 | 1116.2 | -1535.9 | 1488.5 | .233 | .204 | .181 | .137 | 37.9 | 74.4 |
| 345 | 93.2 | 63.4 | 122.3 | -69.2 | 79.1 | 1178.2 | -1660.0 | 1567.0 | .229 | .199 | .176 | .133 | 39.7 | 77.9 |
| 360 | 97.3 | 63.7 | 126.5 | -71.1 | 81.4 | 1240.2 | -1788.8 | 1645.7 | .225 | .195 | .172 | .129 | 41.5 | 81.3 |
| Impact | | I | IV | I | III | I | II | III | | | | | | |
| Dead Load | | .2918 x wL | 1.5582 x wL | -.7082 x wL | .8500 x wL | .0426 x wL ² | -.2082 x wL ² | .1530 x wL ² | | | | | .2918 x L | .8500 x L |

TABLE 4.0

Symmetrical four-span continuous beam.

Constant moment of inertia.

AASHO HS20-44 loading.

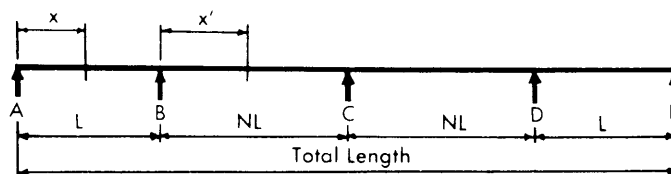


N=1.0

| Total Length Ft. | Span Length "L" | Max. Reaction Kips. | | | Max. Shear Kips. | | | Max. Moment Kip.-ft. | | | | Impact | | | | | Dist.-Ft. | |
|------------------|-----------------|---------------------|----------------|---------------|------------------|---------------|----------------|----------------------------|-----------------------------|----------------------------|-----------------------------|--------|------|------|------|------|--------------|--------------|
| | | at A | at B | at C | in AB at B | in BC at B | in BC at C | in AB at X | at B | in BC at X' | at C | I | II | III | IV | V | X | X' |
| 120 | 30.0 | 46.2 | 62.3 | 60.5 | -53.0 | 49.4 | -49.9 | 227.9 | -183.8 | 177.8 | -171.9 | .300 | .300 | .300 | .270 | .270 | 10.7 | 13.5 |
| 140 | 35.0 | 49.3 | 64.7 | 63.2 | -56.5 | 52.8 | -53.3 | 286.3 | -218.8 | 228.4 | -204.0 | .300 | .300 | .300 | .256 | .256 | 12.9 | 15.9 |
| 160 | 40.0 | 51.8 | 66.4 | 65.1 | -59.0 | 55.5 | -56.0 | 352.0 | -254.5 | 281.8 | -236.0 | .300 | .300 | .300 | .244 | .244 | 16.0 | 18.4 |
| 180 | 45.0 | 53.8 | 67.6 | 66.4 | -60.9 | 57.6 | -58.0 | 421.7 | -303.7 | 337.2 | -277.9 | .294 | .294 | .294 | .233 | .233 | 18.1 | 20.9 |
| 200 | 50.0 | 55.5 | 68.4 | 67.4 | -62.3 | 59.2 | -59.7 | 492.3 | -356.8 | 393.9 | -325.9 | .286 | .286 | .286 | .222 | .222 | 20.1 | 23.3 |
| 220 | 55.0 | 56.9 | 69.1 | 68.1 | -63.4 | 60.6 | -61.0 | 563.4 | -413.6 | 451.6 | -377.4 | .278 | .278 | .278 | .213 | .213 | 22.2 | 25.8 |
| 240 | 60.0 | 58.1 | 73.0 | 69.9 | -64.3 | 61.7 | -62.1 | 635.0 | -474.4 | 510.1 | -432.2 | .270 | .270 | .270 | .204 | .204 | 24.3 | 28.2 |
| 260 | 65.0 | 59.1 | 76.9 | 73.5 | -65.1 | 62.6 | -63.0 | 706.9 | -539.0 | 569.1 | -490.5 | .263 | .263 | .263 | .196 | .196 | 26.4 | 30.7 |
| 280 | 70.0 | 60.0 | 80.8 | 77.2 | -65.7 | 63.4 | -63.8 | 779.0 | -607.5 | 628.6 | -552.3 | .256 | .256 | .256 | .189 | .189 | 28.4 | 33.2 |
| 300 | 75.0 | 60.8 | 84.7 | 80.9 | -66.2 | 64.1 | -64.4 | 851.4 | -679.8 | 688.5 | -617.4 | .250 | .250 | .250 | .182 | .182 | 30.6 | 35.6 |
| 320 | 80.0 | 61.5 | 88.6 | 84.5 | -66.7 | 64.7 | -65.0 | 923.9 | -756.0 | 748.6 | -686.0 | .244 | .244 | .244 | .175 | .175 | 32.7 | 38.2 |
| 340 | 85.0 | 62.1 | 92.5 | 88.2 | -67.0 | 65.2 | -65.5 | 996.6 | -836.0 | 809.1 | -758.1 | .238 | .238 | .238 | .169 | .169 | 34.9 | 40.6 |
| 360 | 90.0 | 62.6 | 96.5 | 91.8 | -67.4 | 65.6 | -65.9 | 1069.4 | -919.9 | 869.7 | -833.5 | .233 | .233 | .233 | .164 | .164 | 37.0 | 43.1 |
| 380 | 95.0 | 63.1 | 100.4 | 95.5 | -67.7 | 66.0 | -66.3 | 1142.3 | -1007.6 | 930.5 | -912.4 | .227 | .227 | .227 | .159 | .159 | 39.1 | 45.5 |
| 400 | 100.0 | 63.6 | 104.3 | 99.1 | -67.9 | 66.3 | -66.6 | 1215.3 | -1099.2 | 991.4 | -994.7 | .222 | .222 | .222 | .154 | .154 | 41.1 | 48.0 |
| 420 | 105.0 | 63.9 | 108.2 | 102.8 | -68.2 | 66.7 | -66.9 | 1288.3 | -1194.7 | 1052.5 | -1080.4 | .217 | .217 | .217 | .149 | .149 | 43.2 | 50.5 |
| 440 | 110.0 | 64.3 | 112.1 | 106.5 | -69.7 | 68.4 | -67.2 | 1361.4 | -1294.0 | 1113.7 | -1169.6 | .213 | .213 | .213 | .145 | .145 | 45.5 | 53.0 |
| 460 | 115.0 | 64.6 | 116.0 | 110.1 | -71.7 | 70.4 | -68.1 | 1434.6 | -1397.2 | 1175.0 | -1262.2 | .208 | .208 | .208 | .141 | .141 | 47.5 | 55.4 |
| 480 | 120.0 | 64.9 | 119.9 | 113.8 | -73.7 | 72.3 | -69.9 | 1507.7 | -1504.2 | 1236.3 | -1358.2 | .204 | .204 | .204 | .137 | .137 | 49.6 | 57.9 |
| Impact | | I | IV | V | I | III | III | I | II | III | III | | | | | | | |
| Dead Load | | .3929 x wL | 1.1429 x wL | .9286 x wL | -.6071 x wL | .5357 x wL | -.4643 x wL | .0772 x wL ² | -.1071 x wL ² | .0364 x wL ² | -.0714 x wL ² | | | | | | .3929 x L | .5357 x L |

TABLE 4.1

Symmetrical four-span continuous beam.
 Constant moment of inertia.
 AASHO HS20-44 loading.

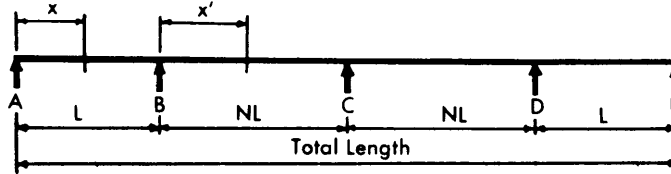


N=1.1

| Total Length Ft. | Span Length "L" | Max. Reaction Kips. | | | Max. Shear Kips. | | | Max. Moment Kip.-ft. | | | | Impact | | | | | Dist.-Ft. | |
|------------------|-----------------|---------------------|----------------|----------------|------------------|---------------|----------------|----------------------------|-----------------------------|----------------------------|-----------------------------|--------|------|------|------|------|--------------|--------------|
| | | at A | at B | at C | in AB at B | in BC at B | in BC at C | in AB at X | at B | in BC at X' | at C | I | II | III | IV | V | X | X' |
| 120 | 28.6 | 45.3 | 61.9 | 61.3 | -51.6 | 50.6 | -50.8 | 213.8 | -181.7 | 189.7 | -179.9 | .300 | .300 | .300 | .270 | .266 | 10.2 | 14.2 |
| 140 | 33.3 | 48.5 | 64.3 | 63.8 | -55.3 | 54.0 | -54.1 | 269.4 | -215.2 | 243.0 | -213.3 | .300 | .300 | .300 | .256 | .252 | 12.1 | 16.8 |
| 160 | 38.1 | 51.1 | 66.0 | 65.5 | -58.0 | 56.5 | -56.7 | 329.6 | -251.8 | 299.1 | -248.0 | .300 | .300 | .300 | .244 | .239 | 15.3 | 19.5 |
| 180 | 42.9 | 53.2 | 67.2 | 66.8 | -60.0 | 58.5 | -58.7 | 396.3 | -300.3 | 357.0 | -295.8 | .298 | .294 | .290 | .233 | .228 | 17.3 | 22.0 |
| 200 | 47.6 | 54.9 | 68.1 | 67.7 | -61.5 | 60.1 | -60.2 | 463.8 | -352.7 | 416.3 | -347.3 | .290 | .286 | .282 | .222 | .218 | 19.2 | 24.7 |
| 220 | 52.4 | 56.4 | 68.7 | 68.4 | -62.7 | 61.4 | -61.5 | 532.0 | -408.9 | 476.5 | -402.5 | .282 | .278 | .274 | .213 | .208 | 21.3 | 27.3 |
| 240 | 57.1 | 57.6 | 72.5 | 71.7 | -63.7 | 62.4 | -62.6 | 600.6 | -468.8 | 537.5 | -461.5 | .275 | .270 | .266 | .204 | .199 | 23.3 | 29.9 |
| 260 | 61.9 | 58.6 | 76.4 | 75.6 | -64.5 | 63.3 | -63.4 | 669.6 | -532.6 | 599.0 | -524.2 | .268 | .263 | .259 | .196 | .191 | 25.2 | 32.5 |
| 280 | 66.7 | 59.6 | 80.3 | 79.4 | -65.1 | 64.0 | -64.2 | 738.8 | -600.2 | 661.0 | -590.6 | .261 | .256 | .252 | .189 | .184 | 27.2 | 35.1 |
| 300 | 71.4 | 60.4 | 84.2 | 83.2 | -65.7 | 64.7 | -64.8 | 808.2 | -671.5 | 723.3 | -660.7 | .255 | .250 | .246 | .182 | .177 | 29.3 | 37.8 |
| 320 | 76.2 | 61.1 | 88.1 | 87.0 | -66.2 | 65.2 | -65.3 | 877.8 | -746.7 | 786.0 | -734.6 | .249 | .244 | .239 | .175 | .171 | 31.3 | 40.3 |
| 340 | 81.0 | 61.7 | 91.9 | 90.8 | -66.6 | 65.7 | -65.8 | 947.6 | -825.6 | 848.8 | -812.2 | .243 | .238 | .234 | .169 | .165 | 33.4 | 42.9 |
| 360 | 85.7 | 62.3 | 95.8 | 94.6 | -67.0 | 66.1 | -66.2 | 1017.4 | -908.4 | 911.9 | -893.6 | .237 | .233 | .228 | .164 | .159 | 35.4 | 45.6 |
| 380 | 90.5 | 62.8 | 99.7 | 98.4 | -67.3 | 66.5 | -66.6 | 1087.4 | -995.0 | 975.2 | -978.6 | .232 | .227 | .223 | .159 | .154 | 37.4 | 48.1 |
| 400 | 95.2 | 63.2 | 103.6 | 102.2 | -67.6 | 66.8 | -66.9 | 1157.4 | -1085.3 | 1038.5 | -1067.4 | .227 | .222 | .218 | .154 | .149 | 39.5 | 50.7 |
| 420 | 100.0 | 63.6 | 107.4 | 106.0 | -67.8 | 67.1 | -67.2 | 1227.6 | -1179.5 | 1102.0 | -1159.9 | .222 | .217 | .213 | .149 | .145 | 41.5 | 53.3 |
| 440 | 104.8 | 64.0 | 111.3 | 109.9 | -68.3 | 69.0 | -67.9 | 1297.8 | -1277.4 | 1165.7 | -1256.2 | .218 | .213 | .208 | .145 | .141 | 43.6 | 55.9 |
| 460 | 109.5 | 64.3 | 115.2 | 113.7 | -70.2 | 71.0 | -69.8 | 1368.0 | -1379.2 | 1229.4 | -1356.2 | .213 | .208 | .204 | .141 | .137 | 45.5 | 58.7 |
| 480 | 114.3 | 64.7 | 119.1 | 117.5 | -72.1 | 72.9 | -71.7 | 1438.3 | -1484.7 | 1293.1 | -1459.9 | .209 | .204 | .199 | .137 | .133 | 47.7 | 61.2 |
| Impact | | I | IV | V | I | III | III | I | II | III | III | | | | | | | |
| Dead Load | | .3859 x wL | 1.1821 x wL | 1.0639 x wL | -.6141 x wL | .5681 x wL | -.5319 x wL | .0745 x wL ² | -.1141 x wL ² | .0473 x wL ² | -.0942 x wL ² | | | | | | .3859 x L | .5681 x L |

TABLE 4.2

Symmetrical four-span continuous beam.
 Constant moment of inertia.
 AASHO HS20-44 loading.



N=1.2

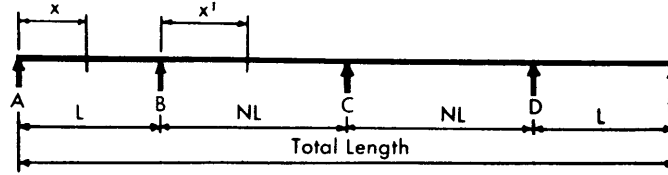
| Total Length Ft. | Span Length "L" | Max. Reaction Kips. | | | Max. Shear Kips. | | | Max. Moment Kip.-ft. | | | | Impact | | | | | Dist.-Ft. | |
|------------------|-----------------|---------------------|----------------|----------------|------------------|---------------|----------------|----------------------------|-----------------------------|----------------------------|-----------------------------|--------|------|------|------|------|--------------|--------------|
| | | at A | at B | at C | in AB at B | in BC at B | in BC at C | in AB at X | at B | in BC at X' | at C | I | II | III | IV | V | X | X' |
| 120 | 27.3 | 44.5 | 61.8 | 61.9 | -50.2 | 51.7 | -51.6 | 200.8 | -182.7 | 200.6 | -187.1 | .300 | .300 | .300 | .270 | .263 | 9.7 | 17.9 |
| 140 | 31.8 | 47.7 | 64.2 | 64.3 | -54.1 | 54.9 | -54.8 | 253.8 | -216.6 | 256.3 | -221.6 | .300 | .300 | .300 | .256 | .248 | 11.5 | 20.6 |
| 160 | 36.4 | 50.3 | 65.9 | 65.9 | -56.9 | 57.4 | -57.3 | 308.4 | -251.1 | 314.7 | -261.5 | .300 | .300 | .296 | .244 | .236 | 13.9 | 23.4 |
| 180 | 40.9 | 52.5 | 67.1 | 67.1 | -59.1 | 59.3 | -59.2 | 372.8 | -299.6 | 374.9 | -312.2 | .300 | .294 | .287 | .233 | .224 | 16.6 | 26.1 |
| 200 | 45.5 | 54.3 | 68.0 | 67.9 | -60.7 | 60.8 | -60.7 | 437.6 | -351.8 | 436.5 | -367.0 | .293 | .286 | .278 | .222 | .214 | 18.4 | 28.8 |
| 220 | 50.0 | 55.8 | 68.6 | 69.5 | -62.0 | 62.0 | -61.9 | 503.0 | -407.8 | 498.9 | -425.7 | .286 | .278 | .270 | .213 | .204 | 20.3 | 31.5 |
| 240 | 54.5 | 57.1 | 72.3 | 73.4 | -63.0 | 63.0 | -62.9 | 568.9 | -467.6 | 562.2 | -488.5 | .278 | .270 | .263 | .204 | .195 | 22.3 | 34.3 |
| 260 | 59.1 | 58.2 | 76.2 | 77.4 | -63.9 | 63.9 | -63.8 | 635.1 | -531.2 | 625.9 | -555.2 | .272 | .263 | .255 | .196 | .187 | 24.2 | 37.0 |
| 280 | 63.6 | 59.1 | 80.0 | 81.3 | -64.6 | 64.6 | -64.5 | 701.6 | -598.6 | 690.1 | -626.0 | .265 | .256 | .248 | .189 | .180 | 26.2 | 39.7 |
| 300 | 68.2 | 59.9 | 83.9 | 85.3 | -65.2 | 65.1 | -65.1 | 768.3 | -669.8 | 754.6 | -700.8 | .259 | .250 | .242 | .182 | .173 | 28.0 | 42.5 |
| 320 | 72.7 | 60.7 | 87.8 | 89.2 | -65.7 | 65.7 | -65.6 | 835.2 | -744.8 | 819.4 | -779.6 | .253 | .244 | .236 | .175 | .167 | 30.0 | 45.2 |
| 340 | 77.3 | 61.3 | 91.6 | 93.2 | -66.2 | 66.1 | -66.0 | 902.3 | -823.5 | 884.5 | -862.4 | .247 | .238 | .230 | .169 | .161 | 31.9 | 48.0 |
| 360 | 81.8 | 61.9 | 95.5 | 97.1 | -66.6 | 66.5 | -66.4 | 969.4 | -906.1 | 949.8 | -949.2 | .242 | .233 | .224 | .164 | .156 | 33.9 | 50.8 |
| 380 | 86.4 | 62.4 | 99.3 | 101.1 | -66.9 | 66.8 | -66.8 | 1036.7 | -992.4 | 1015.2 | -1040.0 | .237 | .227 | .219 | .159 | .150 | 35.9 | 53.5 |
| 400 | 90.9 | 62.9 | 103.2 | 105.0 | -67.2 | 67.1 | -67.1 | 1104.0 | -1082.5 | 1080.7 | -1134.8 | .232 | .222 | .214 | .154 | .146 | 37.9 | 56.2 |
| 420 | 95.5 | 63.3 | 107.1 | 109.0 | -67.5 | 67.8 | -67.5 | 1171.5 | -1176.5 | 1146.4 | -1233.7 | .227 | .217 | .209 | .149 | .141 | 39.8 | 59.0 |
| 440 | 100.0 | 63.7 | 110.9 | 112.9 | -67.7 | 69.8 | -69.5 | 1238.9 | -1274.2 | 1212.2 | -1336.5 | .222 | .213 | .204 | .145 | .137 | 41.8 | 61.6 |
| 460 | 104.5 | 64.1 | 114.8 | 116.9 | -69.0 | 71.7 | -71.4 | 1306.5 | -1375.7 | 1278.1 | -1443.4 | .218 | .208 | .200 | .141 | .133 | 43.7 | 64.4 |
| 480 | 109.1 | 64.4 | 118.6 | 120.8 | -70.9 | 73.7 | -73.4 | 1374.1 | -1481.0 | 1344.0 | -1554.2 | .214 | .204 | .195 | .137 | .129 | 45.6 | 67.1 |
| Impact | | I | IV | V | I | III | III | I | II | III | III | | | | | | | |
| Dead Load | | .3774 x wL | 1.2259 x wL | 1.1934 x wL | -.6226 x wL | .6033 x wL | -.5967 x wL | .0712 x wL ² | -.1226 x wL ² | .0593 x wL ² | -.1187 x wL ² | | | | | | .3774 x L | .6033 x L |

TABLE 4.3

Symmetrical four-span continuous beam.

Constant moment of inertia.

AASHO HS20-44 loading.



N=1.3

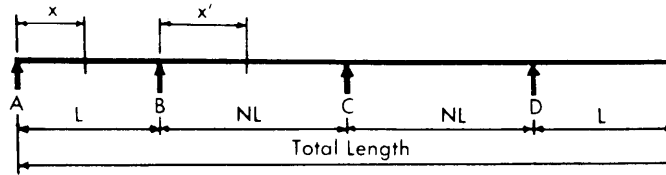
| Total Length Ft. | Span Length "L" | Max. Reaction Kips. | | | Max. Shear Kips. | | | Max. Moment Kip.-ft. | | | | Impact | | | | | Dist.-Ft. | |
|------------------|-----------------|---------------------|----------------|----------------|------------------|---------------|----------------|----------------------------|-----------------------------|----------------------------|-----------------------------|--------|------|------|------|------|--------------|--------------|
| | | at A | at B | at C | in AB at B | in BC at B | in BC at C | in AB at X | at B | in BC at X' | at C | I | II | III | IV | V | X | X' |
| 120 | 26.1 | 43.7 | 61.9 | 62.4 | -48.8 | 52.6 | -52.2 | 188.9 | -184.4 | 210.6 | -193.5 | .300 | .300 | .300 | .270 | .259 | 9.2 | 18.5 |
| 140 | 30.4 | 46.9 | 64.3 | 64.7 | -52.9 | 55.8 | -55.4 | 239.5 | -218.6 | 268.4 | -229.0 | .300 | .300 | .300 | .256 | .245 | 11.0 | 21.4 |
| 160 | 34.8 | 49.6 | 66.0 | 66.2 | -55.9 | 58.2 | -57.8 | 292.0 | -252.7 | 328.9 | -274.0 | .300 | .300 | .294 | .244 | .232 | 13.0 | 24.2 |
| 180 | 39.1 | 51.8 | 67.2 | 67.3 | -58.2 | 60.0 | -59.6 | 351.0 | -300.8 | 391.2 | -327.5 | .300 | .294 | .284 | .233 | .221 | 15.9 | 27.1 |
| 200 | 43.5 | 53.7 | 68.0 | 68.2 | -59.9 | 61.4 | -61.1 | 413.2 | -353.3 | 454.8 | -385.2 | .297 | .286 | .275 | .222 | .210 | 17.7 | 30.0 |
| 220 | 47.8 | 55.2 | 68.7 | 70.8 | -61.3 | 62.6 | -62.3 | 476.1 | -409.6 | 519.3 | -447.2 | .289 | .278 | .267 | .213 | .201 | 19.6 | 32.8 |
| 240 | 52.2 | 56.5 | 72.3 | 74.9 | -62.4 | 63.6 | -63.2 | 539.5 | -469.7 | 584.5 | -513.5 | .282 | .270 | .259 | .204 | .192 | 21.4 | 35.6 |
| 260 | 56.5 | 57.7 | 76.1 | 79.0 | -63.3 | 64.3 | -64.0 | 603.2 | -533.7 | 650.2 | -584.0 | .275 | .263 | .252 | .196 | .184 | 23.3 | 38.5 |
| 280 | 60.9 | 58.6 | 80.0 | 83.1 | -64.0 | 65.0 | -64.7 | 667.1 | -601.5 | 716.4 | -658.8 | .269 | .256 | .245 | .189 | .177 | 25.1 | 41.3 |
| 300 | 65.2 | 59.5 | 83.8 | 87.1 | -64.7 | 65.6 | -65.3 | 731.3 | -673.1 | 782.9 | -737.9 | .263 | .250 | .238 | .182 | .170 | 27.0 | 44.2 |
| 320 | 69.6 | 60.3 | 87.7 | 91.2 | -65.2 | 66.0 | -65.8 | 795.7 | -748.5 | 849.7 | -821.3 | .257 | .244 | .232 | .175 | .163 | 28.8 | 47.0 |
| 340 | 73.9 | 60.9 | 91.5 | 95.3 | -65.7 | 66.5 | -66.2 | 860.3 | -827.7 | 916.7 | -908.9 | .251 | .238 | .226 | .169 | .158 | 30.8 | 49.9 |
| 360 | 78.3 | 61.5 | 95.4 | 99.4 | -66.1 | 66.8 | -66.6 | 924.9 | -910.7 | 983.9 | -1000.8 | .246 | .233 | .221 | .164 | .152 | 32.6 | 52.7 |
| 380 | 82.6 | 62.1 | 99.3 | 103.4 | -66.5 | 67.2 | -66.9 | 989.7 | -997.6 | 1051.3 | -1097.0 | .241 | .227 | .215 | .159 | .147 | 34.5 | 55.7 |
| 400 | 87.0 | 62.5 | 103.1 | 107.5 | -66.8 | 67.4 | -67.2 | 1054.5 | -1088.3 | 1118.8 | -1197.4 | .236 | .222 | .210 | .154 | .142 | 36.3 | 58.4 |
| 420 | 91.3 | 63.0 | 107.0 | 111.6 | -67.1 | 68.5 | -68.8 | 1119.4 | -1182.8 | 1186.4 | -1302.1 | .231 | .217 | .205 | .149 | .138 | 38.3 | 61.3 |
| 440 | 95.7 | 63.4 | 110.8 | 115.7 | -67.4 | 70.6 | -70.8 | 1184.4 | -1281.1 | 1254.1 | -1411.1 | .227 | .213 | .201 | .145 | .134 | 40.2 | 64.1 |
| 460 | 100.0 | 63.8 | 114.7 | 119.7 | -68.1 | 72.6 | -72.9 | 1249.5 | -1383.2 | 1321.9 | -1524.4 | .222 | .208 | .196 | .141 | .130 | 42.0 | 67.0 |
| 480 | 104.3 | 64.1 | 118.5 | 123.8 | -69.9 | 74.6 | -74.9 | 1314.6 | -1489.2 | 1389.8 | -1641.9 | .218 | .204 | .192 | .137 | .126 | 44.0 | 69.8 |
| Impact | | I | IV | V | I | III | III | I | II | III | III | | | | | | | |
| Dead Load | | .3672 x wL | 1.2736 x wL | 1.3185 x wL | -.6328 x wL | .6407 x wL | -.6593 x wL | .0674 x wL ² | -.1328 x wL ² | .0725 x wL ² | -.1448 x wL ² | | | | | | .3672 x L | .6407 x L |

TABLE 4.4

Symmetrical four-span continuous beam.

Constant moment of inertia.

AASHO HS20-44 loading.

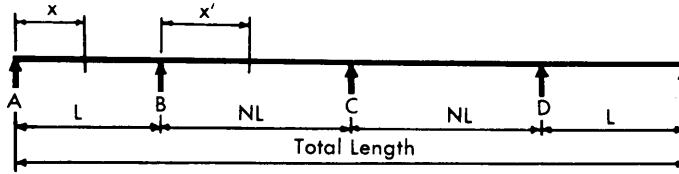


N=1.4

| Total Length Ft. | Span Length "L" | Max. Reaction Kips. | | | Max. Shear Kips. | | | Max. Moment Kip.-ft. | | | | Impact | | | | | Dist.-Ft. | |
|------------------|-----------------|---------------------|----------------|----------------|------------------|---------------|----------------|----------------------------|-----------------------------|----------------------------|-----------------------------|--------|------|------|------|------|--------------|--------------|
| | | at A | at B | at C | in AB at B | in BC at B | in BC at C | in AB at X | at B | in BC at X' | at C | I | II | III | IV | V | X | X' |
| 120 | 25.0 | 42.8 | 62.1 | 62.8 | -47.5 | 53.4 | -52.8 | 177.9 | -186.5 | 219.6 | -199.3 | .300 | .300 | .300 | .270 | .256 | 8.8 | 19.1 |
| 140 | 29.2 | 46.2 | 64.5 | 65.0 | -51.8 | 56.5 | -55.9 | 226.2 | -221.1 | 279.4 | -235.8 | .300 | .300 | .300 | .256 | .242 | 10.5 | 22.1 |
| 160 | 33.3 | 48.9 | 66.2 | 66.5 | -54.9 | 58.8 | -58.2 | 276.6 | -256.2 | 341.8 | -285.5 | .300 | .300 | .291 | .244 | .229 | 12.3 | 25.0 |
| 180 | 37.5 | 51.2 | 67.4 | 67.6 | -57.3 | 60.6 | -60.0 | 330.8 | -303.5 | 405.9 | -341.5 | .300 | .294 | .282 | .233 | .217 | 15.2 | 28.0 |
| 200 | 41.7 | 53.0 | 68.3 | 68.3 | -59.1 | 62.0 | -61.4 | 390.6 | -356.6 | 471.3 | -402.1 | .300 | .286 | .273 | .222 | .207 | 17.0 | 31.0 |
| 220 | 45.8 | 54.6 | 68.9 | 72.1 | -60.5 | 63.1 | -62.6 | 451.1 | -413.6 | 537.6 | -467.1 | .293 | .278 | .264 | .213 | .197 | 18.8 | 33.9 |
| 240 | 50.0 | 56.0 | 72.3 | 76.3 | -61.7 | 64.0 | -63.5 | 512.1 | -474.4 | 604.6 | -536.6 | .286 | .270 | .256 | .204 | .189 | 20.6 | 36.9 |
| 260 | 54.2 | 57.2 | 76.2 | 80.5 | -62.7 | 64.8 | -64.3 | 573.5 | -539.1 | 672.1 | -610.7 | .279 | .263 | .249 | .196 | .181 | 22.4 | 39.8 |
| 280 | 58.3 | 58.2 | 80.1 | 84.6 | -63.5 | 65.4 | -64.9 | 635.1 | -607.7 | 740.1 | -689.3 | .273 | .256 | .242 | .189 | .173 | 24.1 | 42.9 |
| 300 | 62.5 | 59.1 | 83.9 | 88.8 | -64.2 | 65.9 | -65.5 | 697.0 | -680.2 | 808.4 | -772.4 | .267 | .250 | .235 | .182 | .167 | 25.9 | 45.8 |
| 320 | 66.7 | 59.8 | 87.8 | 93.0 | -64.8 | 66.4 | -66.0 | 759.0 | -756.5 | 876.9 | -860.0 | .261 | .244 | .229 | .175 | .160 | 27.7 | 48.7 |
| 340 | 70.8 | 60.5 | 91.6 | 97.2 | -65.3 | 66.8 | -66.4 | 821.2 | -836.7 | 945.7 | -952.1 | .255 | .238 | .223 | .169 | .155 | 29.5 | 51.7 |
| 360 | 75.0 | 61.2 | 95.5 | 101.4 | -65.7 | 67.1 | -66.8 | 883.6 | -920.7 | 1014.7 | -1048.8 | .250 | .233 | .217 | .164 | .149 | 31.4 | 54.6 |
| 380 | 79.2 | 61.7 | 99.4 | 105.6 | -66.1 | 67.4 | -67.1 | 946.0 | -1008.7 | 1083.8 | -1149.9 | .245 | .227 | .212 | .159 | .144 | 33.2 | 57.6 |
| 400 | 83.3 | 62.2 | 103.2 | 109.8 | -66.5 | 67.7 | -67.9 | 1008.5 | -1100.5 | 1153.1 | -1255.6 | .240 | .222 | .207 | .154 | .140 | 35.0 | 60.6 |
| 420 | 87.5 | 62.7 | 107.1 | 114.0 | -66.8 | 69.3 | -70.0 | 1071.1 | -1196.2 | 1222.5 | -1365.8 | .235 | .217 | .202 | .149 | .135 | 36.8 | 63.5 |
| 440 | 91.7 | 63.1 | 110.9 | 118.1 | -67.0 | 71.4 | -72.1 | 1133.8 | -1295.7 | 1292.0 | -1480.5 | .231 | .213 | .197 | .145 | .131 | 38.6 | 66.5 |
| 460 | 95.8 | 63.5 | 114.8 | 122.3 | -67.4 | 73.5 | -74.2 | 1196.5 | -1399.2 | 1361.5 | -1599.7 | .226 | .208 | .193 | .141 | .127 | 40.5 | 69.4 |
| 480 | 100.0 | 63.8 | 118.7 | 126.5 | -69.2 | 75.5 | -76.3 | 1259.3 | -1506.5 | 1431.2 | -1723.4 | .222 | .204 | .189 | .137 | .123 | 42.2 | 72.4 |
| Impact | | I | IV | V | I | III | III | I | II | III | III | | | | | | | |
| Dead Load | | .3554 x wL | 1.3246 x wL | 1.4401 x wL | -.6446 x wL | .6800 x wL | -.7200 x wL | .0631 x wL ² | -.1446 x wL ² | .0865 x wL ² | -.1727 x wL ² | | | | | | .3554 x L | .6800 x L |

TABLE 4.5

Symmetrical four-span continuous beam.
 Constant moment of inertia.
 AASHO HS20-44 loading.

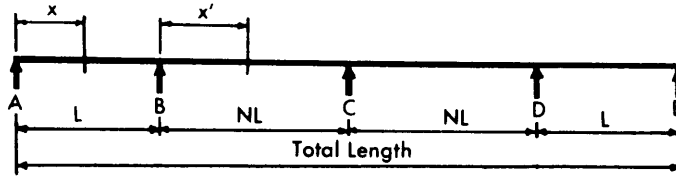


N=1.5

| Total Length Ft. | Span Length "L" | Max. Reaction Kips. | | | Max. Shear Kips. | | | Max. Moment Kip.-ft. | | | | Impact | | | | | Dist.-Ft. | |
|------------------|-----------------|---------------------|----------------|----------------|------------------|---------------|----------------|----------------------------|-----------------------------|----------------------------|-----------------------------|--------|------|------|------|------|--------------|--------------|
| | | at A | at B | at C | in AB at B | in BC at B | in BC at C | in AB at X | at B | in BC at X' | at C | I | II | III | IV | V | X | X' |
| 120 | 24.0 | 42.0 | 62.4 | 63.2 | -46.1 | 54.1 | -53.3 | 167.6 | -193.1 | 227.9 | -204.6 | .300 | .300 | .300 | .270 | .254 | 8.4 | 19.7 |
| 140 | 28.0 | 45.4 | 64.9 | 65.3 | -50.6 | 57.1 | -56.3 | 213.9 | -233.1 | 289.4 | -242.6 | .300 | .300 | .299 | .256 | .239 | 10.0 | 22.7 |
| 160 | 32.0 | 48.2 | 66.5 | 66.7 | -53.9 | 59.4 | -58.6 | 262.2 | -274.5 | 353.4 | -296.2 | .300 | .300 | .289 | .244 | .226 | 11.7 | 25.8 |
| 180 | 36.0 | 50.5 | 67.7 | 67.7 | -56.4 | 61.1 | -60.3 | 311.4 | -321.0 | 419.3 | -354.6 | .300 | .294 | .279 | .233 | .215 | 14.0 | 28.9 |
| 200 | 40.0 | 52.4 | 68.6 | 68.9 | -58.3 | 62.4 | -61.7 | 369.6 | -366.8 | 486.3 | -417.7 | .300 | .286 | .270 | .222 | .204 | 16.4 | 31.9 |
| 220 | 44.0 | 54.1 | 69.3 | 73.2 | -59.8 | 63.5 | -62.8 | 427.9 | -419.2 | 554.3 | -485.6 | .296 | .278 | .262 | .213 | .195 | 18.1 | 35.0 |
| 240 | 48.0 | 55.5 | 72.5 | 77.5 | -61.1 | 64.4 | -63.7 | 486.7 | -481.0 | 622.9 | -558.2 | .289 | .270 | .254 | .204 | .186 | 19.8 | 38.1 |
| 260 | 52.0 | 56.7 | 76.4 | 81.8 | -62.1 | 65.1 | -64.5 | 545.8 | -546.8 | 692.1 | -635.5 | .282 | .263 | .246 | .196 | .178 | 21.5 | 41.1 |
| 280 | 56.0 | 57.7 | 80.3 | 86.1 | -62.9 | 65.7 | -65.1 | 605.3 | -616.5 | 761.6 | -717.6 | .276 | .256 | .239 | .189 | .171 | 23.2 | 44.2 |
| 300 | 60.0 | 58.6 | 84.1 | 90.4 | -63.7 | 66.2 | -65.7 | 665.0 | -690.1 | 831.5 | -804.4 | .270 | .250 | .233 | .182 | .164 | 24.9 | 47.2 |
| 320 | 64.0 | 59.4 | 88.0 | 94.7 | -64.3 | 66.7 | -66.1 | 724.9 | -767.7 | 901.7 | -896.0 | .265 | .244 | .226 | .175 | .158 | 26.7 | 50.3 |
| 340 | 68.0 | 60.1 | 91.9 | 99.0 | -64.8 | 67.1 | -66.5 | 784.9 | -849.3 | 972.1 | -992.3 | .259 | .238 | .220 | .169 | .152 | 28.5 | 53.4 |
| 360 | 72.0 | 60.8 | 95.8 | 103.3 | -65.3 | 67.4 | -66.9 | 845.0 | -934.8 | 1042.7 | -1093.4 | .254 | .233 | .215 | .164 | .147 | 30.2 | 56.4 |
| 380 | 76.0 | 61.4 | 99.6 | 107.5 | -65.7 | 67.7 | -67.2 | 905.3 | -1024.2 | 1113.4 | -1199.2 | .249 | .227 | .209 | .159 | .142 | 31.9 | 59.5 |
| 400 | 80.0 | 61.9 | 103.5 | 111.8 | -66.1 | 68.0 | -68.9 | 965.7 | -1117.6 | 1184.3 | -1309.8 | .244 | .222 | .204 | .154 | .137 | 33.7 | 62.5 |
| 420 | 84.0 | 62.4 | 107.4 | 116.1 | -66.4 | 70.1 | -71.1 | 1026.1 | -1215.0 | 1255.3 | -1425.0 | .239 | .217 | .199 | .149 | .133 | 35.5 | 65.6 |
| 440 | 88.0 | 62.8 | 111.3 | 120.4 | -66.7 | 72.2 | -73.2 | 1086.6 | -1316.3 | 1326.3 | -1545.1 | .235 | .213 | .195 | .145 | .129 | 37.2 | 68.6 |
| 460 | 92.0 | 63.2 | 115.1 | 124.7 | -67.0 | 74.3 | -75.4 | 1147.1 | -1421.5 | 1397.5 | -1669.9 | .230 | .208 | .190 | .141 | .125 | 38.9 | 71.7 |
| 480 | 96.0 | 63.5 | 119.0 | 129.0 | -68.6 | 76.4 | -77.5 | 1207.7 | -1530.7 | 1468.7 | -1799.4 | .226 | .204 | .186 | .137 | .121 | 40.7 | 74.9 |
| Impact | | I | IV | V | I | III | III | I | II | III | III | | | | | | | |
| Dead Load | | .3419 x WL | 1.3787 x WL | 1.5588 x WL | -.6581 x WL | .7206 x WL | -.7794 x WL | .0585 x WL ² | -.1581 x WL ² | .1015 x WL ² | -.2022 x WL ² | | | | | | .3419 x L | .7206 x L |

TABLE 4.6

Symmetrical four-span continuous beam.
 Constant moment of inertia.
 AASHO HS20-44 loading.

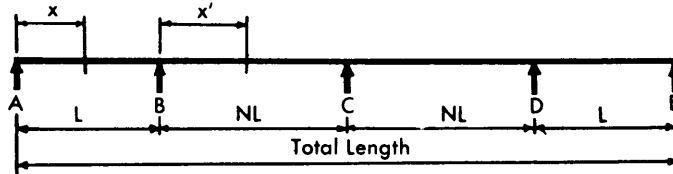


N=1.6

| Total Length Ft. | Span Length "L" | Max. Reaction Kips. | | | Max. Shear Kips. | | | Max. Moment Kip.-ft. | | | | Impact | | | | | Dist.-Ft. | |
|------------------|-----------------|---------------------|----------------|----------------|------------------|---------------|----------------|----------------------------|-----------------------------|----------------------------|-----------------------------|--------|------|------|------|------|--------------|--------------|
| | | at A | at B | at C | in AB at B | in BC at B | in BC at C | in AB at X | at B | in BC at X' | at C | I | II | III | IV | V | X | X' |
| 120 | 23.1 | 41.2 | 62.9 | 63.5 | -44.8 | 54.8 | -53.7 | 158.2 | -203.7 | 235.4 | -209.4 | .300 | .300 | .300 | .270 | .251 | 8.0 | 20.2 |
| 140 | 26.9 | 44.6 | 65.3 | 65.5 | -49.5 | 57.7 | -56.6 | 202.4 | -245.6 | 298.5 | -250.5 | .300 | .300 | .297 | .256 | .237 | 9.6 | 23.4 |
| 160 | 30.8 | 47.5 | 67.0 | 66.9 | -52.9 | 59.9 | -58.9 | 248.8 | -291.9 | 364.1 | -306.2 | .300 | .300 | .287 | .244 | .224 | 11.2 | 26.5 |
| 180 | 34.6 | 49.8 | 68.2 | 67.9 | -55.5 | 61.6 | -60.6 | 296.5 | -340.7 | 431.5 | -366.7 | .300 | .294 | .277 | .233 | .212 | 13.1 | 29.7 |
| 200 | 38.5 | 51.8 | 69.0 | 69.9 | -57.5 | 62.9 | -61.9 | 349.9 | -388.8 | 500.0 | -432.3 | .300 | .286 | .268 | .222 | .202 | 15.7 | 32.8 |
| 220 | 42.3 | 53.5 | 69.7 | 74.2 | -59.1 | 63.9 | -63.0 | 406.2 | -436.2 | 569.5 | -502.8 | .299 | .278 | .259 | .213 | .192 | 17.4 | 36.0 |
| 240 | 46.2 | 54.9 | 72.8 | 78.6 | -60.4 | 64.7 | -63.9 | 462.9 | -489.1 | 639.6 | -578.2 | .292 | .270 | .251 | .204 | .183 | 19.1 | 39.2 |
| 260 | 50.0 | 56.2 | 76.6 | 83.0 | -61.5 | 65.4 | -64.7 | 520.0 | -556.1 | 710.3 | -658.6 | .286 | .263 | .244 | .196 | .175 | 20.7 | 42.3 |
| 280 | 53.8 | 57.3 | 80.5 | 87.4 | -62.4 | 66.0 | -65.3 | 577.4 | -627.2 | 781.3 | -744.0 | .280 | .256 | .237 | .189 | .168 | 22.4 | 45.5 |
| 300 | 57.7 | 58.2 | 84.4 | 91.8 | -63.2 | 66.5 | -65.8 | 635.1 | -702.3 | 852.7 | -834.3 | .274 | .250 | .230 | .182 | .161 | 24.0 | 48.7 |
| 320 | 61.5 | 59.0 | 88.3 | 96.2 | -63.8 | 66.9 | -66.3 | 692.9 | -781.5 | 924.3 | -929.6 | .268 | .244 | .224 | .175 | .155 | 25.7 | 51.9 |
| 340 | 65.4 | 59.8 | 92.2 | 100.6 | -64.4 | 67.3 | -66.7 | 750.9 | -864.7 | 996.2 | -1029.8 | .263 | .238 | .218 | .169 | .150 | 27.5 | 54.9 |
| 360 | 69.2 | 60.4 | 96.1 | 104.9 | -64.9 | 67.6 | -67.0 | 809.1 | -951.9 | 1068.2 | -1135.0 | .257 | .233 | .212 | .164 | .144 | 29.1 | 58.1 |
| 380 | 73.1 | 61.0 | 100.0 | 109.3 | -65.3 | 67.9 | -67.7 | 867.3 | -1043.2 | 1140.4 | -1245.2 | .252 | .227 | .207 | .159 | .139 | 30.8 | 61.3 |
| 400 | 76.9 | 61.6 | 103.9 | 113.7 | -65.7 | 68.8 | -69.9 | 925.6 | -1138.5 | 1212.7 | -1360.3 | .248 | .222 | .202 | .154 | .135 | 32.5 | 64.4 |
| 420 | 80.8 | 62.0 | 107.8 | 118.1 | -66.1 | 70.9 | -72.1 | 984.0 | -1237.9 | 1285.1 | -1480.4 | .243 | .217 | .197 | .149 | .130 | 34.2 | 67.5 |
| 440 | 84.6 | 62.5 | 111.7 | 122.5 | -66.4 | 73.1 | -74.2 | 1042.5 | -1341.3 | 1357.6 | -1605.4 | .239 | .213 | .192 | .145 | .126 | 35.8 | 70.7 |
| 460 | 88.5 | 62.9 | 115.6 | 126.9 | -66.7 | 75.2 | -76.4 | 1101.0 | -1448.7 | 1430.2 | -1735.4 | .234 | .208 | .188 | .141 | .123 | 37.6 | 73.9 |
| 480 | 92.3 | 63.3 | 119.5 | 131.3 | -68.1 | 77.4 | -78.6 | 1159.6 | -1560.2 | 1502.9 | -1870.3 | .230 | .204 | .183 | .137 | .119 | 39.2 | 77.0 |
| Impact | | I | IV | V | I | III | III | I | II | III | III | | | | | | | |
| Dead Load | | .3268 x WL | 1.4355 x WL | 1.6753 x WL | -.6732 x WL | .7624 x WL | -.8376 x WL | .0534 x WL ² | -.1732 x WL ² | .1174 x WL ² | -.2334 x WL ² | | | | | | .3268 x L | .7624 x L |

TABLE 4.7

Symmetrical four-span continuous beam.
 Constant moment of inertia.
 AASHO HS20-44 loading.

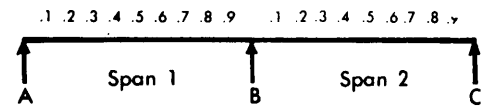


N=1.7

| Total Length Ft. | Span Length "L" | Max. Reaction Kips. | | | Max. Shear Kips. | | | Max. Moment Kip.-ft. | | | | Impact | | | | | Dist.-Pt. | |
|------------------|-----------------|---------------------|----------------|----------------|------------------|---------------|----------------|----------------------------|-----------------------------|----------------------------|-----------------------------|--------|------|------|------|------|--------------|--------------|
| | | at A | at B | at C | in AB at B | in BC at B | in BC at C | in AB at X | at B | in BC at X' | at C | I | II | III | IV | V | X | X' |
| 120 | 22.2 | 40.4 | 63.4 | 63.7 | -43.4 | 55.3 | -54.1 | 152.8 | -213.8 | 242.3 | -213.8 | .300 | .300 | .300 | .270 | .249 | 9.9 | 20.7 |
| 140 | 25.9 | 43.9 | 65.8 | 65.7 | -48.3 | 58.2 | -57.0 | 191.8 | -257.5 | 306.9 | -257.9 | .300 | .300 | .296 | .256 | .235 | 9.2 | 24.0 |
| 160 | 29.6 | 46.8 | 67.5 | 67.1 | -51.9 | 60.3 | -59.1 | 236.3 | -308.5 | 373.9 | -315.4 | .300 | .300 | .285 | .244 | .221 | 10.8 | 27.2 |
| 180 | 33.3 | 49.2 | 68.7 | 68.0 | -54.6 | 62.0 | -60.8 | 282.3 | -359.5 | 442.7 | -378.0 | .300 | .294 | .275 | .233 | .210 | 12.4 | 30.4 |
| 200 | 37.0 | 51.2 | 69.6 | 70.7 | -56.7 | 63.2 | -62.2 | 331.6 | -409.8 | 512.6 | -445.8 | .300 | .286 | .266 | .222 | .199 | 15.2 | 33.7 |
| 220 | 40.7 | 53.0 | 70.2 | 75.2 | -58.4 | 64.2 | -63.2 | 385.9 | -459.4 | 583.4 | -518.8 | .300 | .278 | .257 | .213 | .190 | 16.8 | 37.1 |
| 240 | 44.4 | 54.4 | 73.1 | 79.7 | -59.8 | 65.0 | -64.1 | 440.7 | -508.4 | 654.9 | -596.9 | .295 | .270 | .249 | .204 | .181 | 18.4 | 40.2 |
| 260 | 48.1 | 55.7 | 77.0 | 84.1 | -60.9 | 65.7 | -64.8 | 495.9 | -566.7 | 726.9 | -680.1 | .289 | .263 | .242 | .196 | .173 | 20.0 | 43.4 |
| 280 | 51.9 | 56.8 | 80.9 | 88.6 | -61.8 | 66.3 | -65.4 | 551.4 | -639.4 | 799.3 | -768.6 | .283 | .256 | .235 | .189 | .166 | 21.6 | 46.6 |
| 300 | 55.6 | 57.8 | 84.8 | 93.1 | -62.6 | 66.7 | -65.9 | 607.1 | -716.1 | 872.0 | -862.2 | .277 | .250 | .228 | .182 | .159 | 23.2 | 49.9 |
| 320 | 59.3 | 58.6 | 88.8 | 97.6 | -63.3 | 67.2 | -66.4 | 663.1 | -797.0 | 945.0 | -960.9 | .271 | .244 | .221 | .175 | .153 | 24.8 | 53.2 |
| 340 | 63.0 | 59.4 | 92.7 | 102.0 | -63.9 | 67.5 | -66.8 | 719.1 | -882.1 | 1018.2 | -1064.8 | .266 | .238 | .215 | .169 | .147 | 26.5 | 56.4 |
| 360 | 66.7 | 60.1 | 96.6 | 106.5 | -64.5 | 67.8 | -67.1 | 775.4 | -971.3 | 1091.5 | -1173.8 | .261 | .233 | .210 | .164 | .142 | 28.1 | 59.6 |
| 380 | 70.4 | 60.7 | 100.5 | 111.0 | -64.9 | 68.1 | -68.5 | 831.7 | -1064.7 | 1165.1 | -1288.1 | .256 | .227 | .204 | .159 | .137 | 29.7 | 62.8 |
| 400 | 74.1 | 61.2 | 104.5 | 115.4 | -65.3 | 69.6 | -70.7 | 888.1 | -1162.2 | 1238.7 | -1407.4 | .251 | .222 | .199 | .154 | .133 | 31.3 | 66.1 |
| 420 | 77.8 | 61.7 | 108.4 | 119.9 | -65.7 | 71.7 | -73.0 | 944.6 | -1263.8 | 1312.4 | -1532.0 | .247 | .217 | .194 | .149 | .128 | 33.0 | 69.3 |
| 440 | 81.5 | 62.2 | 112.3 | 124.4 | -66.0 | 73.9 | -75.2 | 1001.2 | -1369.6 | 1386.3 | -1661.7 | .242 | .213 | .190 | .145 | .124 | 34.7 | 72.5 |
| 460 | 85.2 | 62.6 | 116.2 | 128.9 | -66.3 | 76.1 | -77.4 | 1057.9 | -1479.6 | 1460.2 | -1796.5 | .238 | .208 | .185 | .141 | .121 | 36.3 | 75.8 |
| 480 | 88.9 | 63.0 | 120.1 | 133.3 | -67.9 | 78.3 | -79.7 | 1114.6 | -1593.6 | 1534.2 | -1936.5 | .234 | .204 | .181 | .137 | .117 | 37.9 | 79.0 |
| Impact | | I | IV | V | I | III | III | I | II | III | III | | | | | | | |
| Dead Load | | .3101 x wL | 1.4950 x wL | 1.7899 x wL | -.6899 x wL | .8051 x wL | -.8949 x wL | .0481 x wL ² | -.1899 x wL ² | .1342 x wL ² | -.2663 x wL ² | | | | | | .3101 x L | .8051 x L |

| Unit load at | | MOMENTS/PL | | | | | | | | | | | | | | | | | | | | |
|--------------|----|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---|
| | | SPAN 1 | | | | | | | | | | SPAN 2 | | | | | | | | | | |
| | | A | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | B | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | C |
| SPAN 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0875 | .0751 | .0626 | .0501 | .0376 | .0252 | .0127 | .0002 | -.0123 | -.0248 | -.0223 | -.0198 | -.0173 | -.0149 | -.0124 | -.0099 | -.0074 | -.0050 | -.0025 | 0 |
| | .2 | 0 | .0752 | .1504 | .1256 | .1008 | .0760 | .0512 | .0264 | .0016 | -.0232 | -.0480 | -.0432 | -.0384 | -.0336 | -.0288 | -.0240 | -.0192 | -.0144 | -.0096 | -.0048 | 0 |
| | .3 | 0 | .0632 | .1264 | .1895 | .1527 | .1159 | .0791 | .0422 | .0054 | -.0314 | -.0683 | -.0614 | -.0546 | -.0478 | -.0410 | -.0341 | -.0273 | -.0205 | -.0137 | -.0068 | 0 |
| | .4 | 0 | .0516 | .1032 | .1548 | .2064 | .1580 | .1096 | .0612 | .0128 | -.0356 | -.0840 | -.0756 | -.0672 | -.0588 | -.0504 | -.0420 | -.0336 | -.0252 | -.0168 | -.0084 | 0 |
| | .5 | 0 | .0406 | .0813 | .1219 | .1625 | .2031 | .1438 | .0844 | .0250 | -.0344 | -.0938 | -.0844 | -.0750 | -.0656 | -.0563 | -.0469 | -.0375 | -.0281 | -.0188 | -.0094 | 0 |
| | .6 | 0 | .0304 | .0608 | .0912 | .1216 | .1520 | .1824 | .1128 | .0432 | -.0264 | -.0960 | -.0864 | -.0768 | -.0672 | -.0576 | -.0480 | -.0384 | -.0288 | -.0192 | -.0096 | 0 |
| | .7 | 0 | .0211 | .0422 | .0632 | .0843 | .1054 | .1265 | .1475 | .0686 | -.0103 | -.0893 | -.0803 | -.0714 | -.0625 | -.0536 | -.0446 | -.0357 | -.0268 | -.0179 | -.0089 | 0 |
| | .8 | 0 | .0128 | .0256 | .0384 | .0512 | .0640 | .0768 | .0896 | .1024 | .0152 | -.0720 | -.0648 | -.0576 | -.0504 | -.0432 | -.0360 | -.0288 | -.0216 | -.0144 | -.0072 | 0 |
| | .9 | 0 | .0057 | .0115 | .0172 | .0229 | .0286 | .0344 | .0401 | .0458 | .0515 | -.0428 | -.0385 | -.0342 | -.0299 | -.0257 | -.0214 | -.0171 | -.0128 | -.0086 | -.0043 | 0 |
| SPAN 2 | B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | -.0043 | -.0086 | -.0128 | -.0171 | -.0214 | -.0257 | -.0299 | -.0342 | -.0385 | -.0428 | .0515 | .0458 | .0401 | .0344 | .0286 | .0229 | .0172 | .0115 | .0057 | 0 |
| | .2 | 0 | -.0072 | -.0144 | -.0216 | -.0288 | -.0360 | -.0432 | -.0504 | -.0576 | -.0648 | -.0720 | .0152 | .1024 | .0896 | .0768 | .0640 | .0512 | .0384 | .0256 | .0128 | 0 |
| | .3 | 0 | -.0089 | -.0179 | -.0268 | -.0357 | -.0446 | -.0536 | -.0625 | -.0714 | -.0803 | -.0893 | -.0103 | .0686 | .1475 | .1265 | .1054 | .0843 | .0632 | .0422 | .0211 | 0 |
| | .4 | 0 | -.0096 | -.0192 | -.0288 | -.0384 | -.0480 | -.0576 | -.0672 | -.0768 | -.0864 | -.0960 | -.0264 | .0432 | .1128 | .1824 | .1520 | .1216 | .0912 | .0608 | .0304 | 0 |
| | .5 | 0 | -.0094 | -.0188 | -.0281 | -.0375 | -.0469 | -.0563 | -.0656 | -.0750 | -.0844 | -.0938 | -.0344 | .0250 | .0844 | .1438 | .2031 | .1625 | .1219 | .0813 | .0406 | 0 |
| | .6 | 0 | -.0084 | -.0168 | -.0252 | -.0336 | -.0420 | -.0504 | -.0588 | -.0672 | -.0756 | -.0840 | -.0356 | .0128 | .0612 | .1096 | .1580 | .2064 | .1548 | .1032 | .0516 | 0 |
| | .7 | 0 | -.0068 | -.0137 | -.0205 | -.0273 | -.0341 | -.0410 | -.0478 | -.0546 | -.0614 | -.0683 | -.0314 | .0054 | .0422 | .0791 | .1159 | .1527 | .1895 | .1264 | .0632 | 0 |
| | .8 | 0 | -.0048 | -.0096 | -.0144 | -.0192 | -.0240 | -.0288 | -.0336 | -.0384 | -.0432 | -.0480 | -.0232 | .0016 | .0264 | .0512 | .0760 | .1008 | .1256 | .1504 | .0752 | 0 |
| | .9 | 0 | -.0025 | -.0050 | -.0074 | -.0099 | -.0124 | -.0149 | -.0173 | -.0198 | -.0223 | -.0248 | -.0123 | .0002 | .0127 | .0252 | .0376 | .0501 | .0626 | .0751 | .0875 | 0 |
| C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| + Area | | 0 | .0388 | .0675 | .0863 | .0950 | .0938 | .0825 | .0613 | .0300 | .0061 | 0 | .0061 | .0300 | .0613 | .0825 | .0938 | .0950 | .0863 | .0675 | .0388 | 0 |
| - Area | | 0 | -.0063 | -.0125 | -.0188 | -.0250 | -.0313 | -.0375 | -.0438 | -.0500 | -.0736 | -.1250 | -.0736 | -.0500 | -.0438 | -.0375 | -.0313 | -.0250 | -.0188 | -.0125 | -.0063 | 0 |
| Total Area | | 0 | .0325 | .0550 | .0675 | .0700 | .0625 | .0450 | .0175 | -.0200 | -.0675 | -.1250 | -.0675 | -.0200 | .0175 | .0450 | .0625 | .0700 | .0675 | .0550 | .0325 | 0 |

TABLE A2.0



| Unit load at | REACTIONS/P | | | SHEARS/P | | | | |
|--------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|--------|
| | R _A | R _B | R _C | V _{AB} | V _{BA} | V _{BC} | V _{CB} | |
| SPAN 1 | A | 1.0 | 0 | 0 | 1.0 | 0 | 0 | 0 |
| | .1 | .8753 | .1495 | -.0248 | .8753 | -.1247 | .0248 | .0248 |
| | .2 | .7520 | .2960 | -.0480 | .7520 | -.2480 | .0480 | .0480 |
| | .3 | .6318 | .4365 | -.0683 | .6318 | -.3682 | .0683 | .0683 |
| | .4 | .5160 | .5680 | -.0840 | .5160 | -.4840 | .0840 | .0840 |
| | .5 | .4063 | .6875 | -.0938 | .4063 | -.5937 | .0938 | .0938 |
| | .6 | .3040 | .7920 | -.0960 | .3040 | -.6960 | .0960 | .0960 |
| | .7 | .2108 | .8785 | -.0893 | .2108 | -.7892 | .0893 | .0893 |
| | .8 | .1280 | .9440 | -.0720 | .1280 | -.8720 | .0720 | .0720 |
| | .9 | .0573 | .9855 | -.0428 | .0573 | -.9427 | .0428 | .0428 |
| SPAN 2 | B | 0 | 1.0 | 0 | 0 | -1.0 | 0 | 0 |
| | .1 | -.0428 | .9855 | .0573 | -.0428 | -.0428 | .9427 | -.0573 |
| | .2 | -.0720 | .9440 | .1280 | -.0720 | -.0720 | .8720 | -.1280 |
| | .3 | -.0893 | .8785 | .2108 | -.0893 | -.0893 | .7892 | -.2108 |
| | .4 | -.0960 | .7920 | .3040 | -.0960 | -.0960 | .6960 | -.3040 |
| | .5 | -.0938 | .6875 | .4063 | -.0938 | -.0938 | .5937 | -.4063 |
| | .6 | -.0840 | .5680 | .5160 | -.0840 | -.0840 | .4840 | -.5160 |
| | .7 | -.0683 | .4365 | .6318 | -.0683 | -.0683 | .3682 | -.6318 |
| | .8 | -.0480 | .2960 | .7520 | -.0480 | -.0480 | .2480 | -.7520 |
| | .9 | -.0248 | .1495 | .8753 | -.0248 | -.0248 | .1247 | -.8753 |
| C | 0 | 0 | 1.0 | 0 | 0 | 0 | -1.0 | |
| + Area | | .4375 | 1.2500 | .4375 | .4375 | 0 | .6250 | .0625 |
| - Area | | -.0625 | 0 | -.0625 | -.0625 | -.6250 | 0 | -.4375 |
| Total Area | | .3750 | 1.2500 | .3750 | .3750 | -.6250 | .6250 | -.3750 |

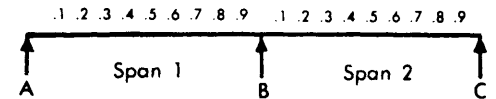
Influence coefficients — Two continuous spans.

L = Length of SHORTER spans; length of LONGER spans = NL.

N=1.0

| Unit load at | MOMENTS/PL | | | | | | | | | | | | | | | | | | | | | |
|--------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---|
| | SPAN 1 | | | | | | | | | | | SPAN 2 | | | | | | | | | | |
| | A. | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | B. | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | C. | |
| SPAN 1 | A. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0876 | .0753 | .0629 | .0506 | .0382 | .0259 | .0135 | .0011 | -.0112 | -.0236 | -.0212 | -.0189 | -.0165 | -.0141 | -.0118 | -.0094 | -.0071 | -.0047 | -.0024 | 0 |
| | .2 | 0 | .0754 | .1509 | .1263 | .1017 | .0771 | .0526 | .0280 | .0034 | -.0211 | -.0457 | -.0411 | -.0366 | -.0320 | -.0274 | -.0229 | -.0183 | -.0137 | -.0091 | -.0046 | 0 |
| | .3 | 0 | .0635 | .1270 | .1905 | .1540 | .1175 | .0810 | .0445 | .0080 | -.0285 | -.0650 | -.0585 | -.0520 | -.0455 | -.0390 | -.0325 | -.0260 | -.0195 | -.0130 | -.0065 | 0 |
| | .4 | 0 | .0520 | .1040 | .1560 | .2080 | .1600 | .1120 | .0640 | .0160 | -.0320 | -.0800 | -.0720 | -.0640 | -.0560 | -.0480 | -.0400 | -.0320 | -.0240 | -.0160 | -.0080 | 0 |
| | .5 | 0 | .0411 | .0821 | .1232 | .1643 | .2054 | .1464 | .0875 | .0286 | -.0304 | -.0893 | -.0804 | -.0714 | -.0625 | -.0536 | -.0446 | -.0357 | -.0268 | -.0179 | -.0089 | 0 |
| | .6 | 0 | .0309 | .0617 | .0926 | .1234 | .1543 | .1851 | .1160 | .0469 | -.0223 | -.0914 | -.0823 | -.0731 | -.0640 | -.0549 | -.0457 | -.0366 | -.0274 | -.0183 | -.0091 | 0 |
| | .7 | 0 | .0215 | .0430 | .0645 | .0860 | .1075 | .1290 | .1505 | .0720 | -.0065 | -.0850 | -.0765 | -.0680 | -.0595 | -.0510 | -.0425 | -.0340 | -.0255 | -.0170 | -.0085 | 0 |
| | .8 | 0 | .0131 | .0263 | .0394 | .0526 | .0657 | .0789 | .0920 | .1051 | .0183 | -.0686 | -.0617 | -.0549 | -.0480 | -.0411 | -.0343 | -.0274 | -.0206 | -.0137 | -.0069 | 0 |
| .9 | 0 | .0059 | .0119 | .0178 | .0237 | .0296 | .0356 | .0415 | .0474 | .0534 | -.0407 | -.0366 | -.0326 | -.0285 | -.0244 | -.0204 | -.0163 | -.0122 | -.0081 | -.0041 | 0 | |
| SPAN 2 | B. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | -.0049 | -.0099 | -.0148 | -.0197 | -.0246 | -.0296 | -.0345 | -.0394 | -.0443 | -.0493 | .0547 | .0486 | .0425 | .0364 | .0304 | .0243 | .0182 | .0121 | .0061 | 0 |
| | .2 | 0 | -.0083 | -.0166 | -.0249 | -.0332 | -.0415 | -.0498 | -.0581 | -.0664 | -.0747 | -.0830 | .0133 | .1096 | .0959 | .0822 | .0685 | .0548 | .0411 | .0274 | .0137 | 0 |
| | .3 | 0 | -.0103 | -.0206 | -.0309 | -.0411 | -.0514 | -.0617 | -.0720 | -.0823 | -.0926 | -.1028 | -.0156 | .0717 | .1590 | .1363 | .1136 | .0909 | .0681 | .0454 | .0227 | 0 |
| | .4 | 0 | -.0111 | -.0221 | -.0332 | -.0443 | -.0553 | -.0664 | -.0774 | -.0885 | -.0996 | -.1106 | -.0336 | .0435 | .1206 | .1976 | .1647 | .1317 | .0988 | .0659 | .0329 | 0 |
| | .5 | 0 | -.0108 | -.0216 | -.0324 | -.0432 | -.0540 | -.0648 | -.0756 | -.0864 | -.0972 | -.1080 | -.0422 | .0236 | .0894 | .1552 | .2210 | .1768 | .1326 | .0884 | .0442 | 0 |
| | .6 | 0 | -.0097 | -.0194 | -.0290 | -.0387 | -.0484 | -.0581 | -.0678 | -.0774 | -.0871 | -.0968 | -.0431 | .0106 | .0642 | .1179 | .1716 | .2253 | .1690 | .1126 | .0563 | 0 |
| | .7 | 0 | -.0079 | -.0157 | -.0236 | -.0315 | -.0393 | -.0472 | -.0551 | -.0629 | -.0708 | -.0786 | -.0378 | .0031 | .0439 | .0848 | .1257 | .1665 | .2074 | .1383 | .0691 | 0 |
| | .8 | 0 | -.0055 | -.0111 | -.0166 | -.0221 | -.0277 | -.0332 | -.0387 | -.0443 | -.0498 | -.0553 | -.0278 | -.0003 | .0273 | .0548 | .0823 | .1099 | .1374 | .1649 | .0825 | 0 |
| .9 | 0 | -.0029 | -.0057 | -.0086 | -.0114 | -.0143 | -.0171 | -.0200 | -.0228 | -.0257 | -.0285 | -.0147 | -.0008 | .0130 | .0269 | .0407 | .0546 | .0684 | .0823 | .0961 | 0 | |
| C. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| +Area | 0 | .0390 | .0681 | .0871 | .0962 | .0952 | .0843 | .0633 | .0324 | .0067 | 0 | .0068 | .0336 | .0716 | .0977 | .1116 | .1135 | .1033 | .0810 | .0465 | 0 | |
| -Area | 0 | -.0079 | -.0158 | -.0238 | -.0317 | -.0396 | -.0475 | -.0555 | -.0634 | -.0865 | -.1387 | -.0772 | -.0478 | -.0417 | -.0357 | -.0298 | -.0238 | -.0179 | -.0119 | -.0060 | 0 | |
| Total Area | 0 | .0311 | .0523 | .0633 | .0645 | .0556 | .0368 | -.0078 | -.0310 | -.0798 | -.1387 | -.0704 | -.0142 | .0299 | .0620 | .0819 | .0897 | .0854 | .0691 | .0405 | 0 | |

TABLE A2.1



| Unit load at | | REACTIONS/P | | | SHEARS/P | | | |
|--------------|----|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|
| | | R _A | R _B | R _C | V _{AB} | V _{BA} | V _{BC} | V _{CB} |
| SPAN 1 | A. | 1.0000 | 0 | 0 | 1.0000 | 0 | 0 | 0 |
| | .1 | .8764 | .1450 | -.0214 | .8764 | -.1236 | .0214 | .0214 |
| | .2 | .7543 | .2873 | -.0416 | .7543 | -.2457 | .0416 | .0416 |
| | .3 | .6350 | .4241 | -.0591 | .6350 | -.3650 | .0591 | .0591 |
| | .4 | .5200 | .5527 | -.0727 | .5200 | -.4800 | .0727 | .0727 |
| | .5 | .4107 | .6705 | -.0812 | .4107 | -.5893 | .0812 | .0812 |
| | .6 | .3086 | .7745 | -.0831 | .3086 | -.6914 | .0831 | .0831 |
| | .7 | .2150 | .8623 | -.0773 | .2150 | -.7850 | .0773 | .0773 |
| | .8 | .1314 | .9309 | -.0623 | .1314 | -.8686 | .0623 | .0623 |
| | .9 | .0593 | .9777 | -.0370 | .0593 | -.9407 | .0370 | .0370 |
| SPAN 2 | B. | 0 | 1.0000 | 0 | 0 | -1.0 0 | 0 1.0 | 0 |
| | .1 | -.0493 | .9941 | .0552 | -.0493 | -.0493 | .9448 | -.0552 |
| | .2 | -.0830 | .9584 | .1246 | -.0830 | -.0830 | .8754 | -.1246 |
| | .3 | -.1028 | .8963 | .2065 | -.1028 | -.1028 | .7935 | -.2065 |
| | .4 | -.1106 | .8112 | .2994 | -.1106 | -.1106 | .7006 | -.2994 |
| | .5 | -.1080 | .7062 | .4018 | -.1080 | -.1080 | .5982 | -.4018 |
| | .6 | -.0968 | .5848 | .5120 | -.0968 | -.0968 | .4880 | -.5120 |
| | .7 | -.0786 | .4501 | .6285 | -.0786 | -.0786 | .3715 | -.6285 |
| | .8 | -.0553 | .3056 | .7497 | -.0553 | -.0553 | .2503 | -.7497 |
| | .9 | -.0285 | .1545 | .8741 | -.0285 | -.0285 | .1259 | -.8741 |
| | C. | 0 | 0 | 1.0000 | 0 | 0 | 0 | -1.0000 |
| + Area | | .4405 | .3149 | .4780 | .4405 | 0 | .6761 | .0541 |
| - Area | | -.0792 | 0 | -.0541 | -.0792 | -.6388 | 0 | -.4780 |
| Total Area | | .3613 | .3149 | .4239 | .3613 | -.6388 | .6761 | -.4239 |

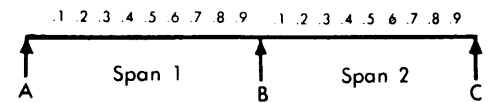
Influence coefficients — Two continuous spans.

L = Length of SHORTER spans; length of LONGER spans = NL.

N=1.1

| Unit load at | | MOMENTS / PL | | | | | | | | | | | | | | | | | | | | | |
|--------------|----|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----|--|
| | | SPAN 1 | | | | | | | | | | | SPAN 2 | | | | | | | | | | |
| | | A. | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | B. | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | C. | |
| SPAN 1 | A. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | .1 | 0 | .0877 | .0755 | .0633 | .0510 | .0388 | .0265 | .0143 | -.0020 | -.0102 | -.0225 | -.0203 | -.0180 | -.0157 | -.0135 | -.0113 | -.0090 | -.0067 | -.0045 | -.0023 | 0 | |
| | .2 | 0 | .0756 | .1513 | .1269 | .1025 | .0782 | .0538 | .0295 | -.0051 | -.0193 | -.0436 | -.0393 | -.0349 | -.0305 | -.0262 | -.0218 | -.0175 | -.0131 | -.0087 | -.0044 | 0 | |
| | .3 | 0 | .0638 | .1276 | .1914 | .1552 | .1190 | .0828 | .0466 | -.0104 | -.0258 | -.0620 | -.0558 | -.0496 | -.0434 | -.0372 | -.0310 | -.0248 | -.0186 | -.0124 | -.0062 | 0 | |
| | .4 | 0 | .0524 | .1047 | .1571 | .2095 | .1618 | .1142 | .0665 | -.0189 | -.0287 | -.0764 | -.0687 | -.0611 | -.0535 | -.0458 | -.0382 | -.0305 | -.0229 | -.0153 | -.0076 | 0 | |
| | .5 | 0 | .0415 | .0830 | .1244 | .1659 | .2074 | .1489 | .0903 | -.0318 | -.0267 | -.0852 | -.0767 | -.0682 | -.0597 | -.0511 | -.0426 | -.0341 | -.0256 | -.0170 | -.0085 | 0 | |
| | .6 | 0 | .0313 | .0625 | .0938 | .1251 | .1564 | .1876 | .1189 | -.0502 | -.0185 | -.0873 | -.0785 | -.0698 | -.0611 | -.0524 | -.0436 | -.0349 | -.0262 | -.0175 | -.0087 | 0 | |
| | .7 | 0 | .0219 | .0438 | .0657 | .0875 | .1094 | .1313 | .1532 | -.0751 | -.0030 | -.0811 | -.0730 | -.0649 | -.0568 | -.0487 | -.0406 | -.0325 | -.0243 | -.0162 | -.0081 | 0 | |
| | .8 | 0 | .0135 | .0269 | .0404 | .0538 | .0673 | .0807 | .0942 | -.1076 | -.0211 | -.0655 | -.0589 | -.0524 | -.0458 | -.0393 | -.0327 | -.0262 | -.0196 | -.0131 | -.0065 | 0 | |
| | .9 | 0 | .0061 | .0122 | .0183 | .0245 | .0306 | .0367 | .0428 | -.0489 | -.0550 | -.0389 | -.0350 | -.0311 | -.0272 | -.0233 | -.0194 | -.0155 | -.0117 | -.0078 | -.0039 | 0 | |
| SPAN 2 | B. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | .1 | 0 | -.0056 | -.0112 | -.0168 | -.0224 | -.0280 | -.0336 | -.0392 | -.0448 | -.0504 | -.0560 | .0576 | .0512 | .0448 | .0384 | .0320 | .0256 | .0192 | .0128 | .0064 | 0 | |
| | .2 | 0 | -.0094 | -.0189 | -.0283 | -.0377 | -.0471 | -.0566 | -.0660 | -.0754 | -.0848 | -.0943 | .0112 | .1166 | .1020 | .0874 | .0729 | .0583 | .0437 | .0291 | .0146 | 0 | |
| | .3 | 0 | -.0117 | -.0234 | -.0351 | -.0467 | -.0584 | -.0701 | -.0818 | -.0935 | -.1052 | -.1168 | .0212 | .0745 | .1702 | .1459 | .1216 | .0973 | .0729 | .0486 | .0243 | 0 | |
| | .4 | 0 | -.0126 | -.0251 | -.0377 | -.0503 | -.0628 | -.0754 | -.0880 | -.1005 | -.1131 | -.1257 | .0411 | .0435 | .1280 | .2126 | .1772 | .1417 | .1063 | .0709 | .0354 | 0 | |
| | .5 | 0 | -.0123 | -.0245 | -.0368 | -.0491 | -.0614 | -.0736 | -.0859 | -.0982 | -.1105 | -.1227 | .0505 | .0218 | .0941 | .1664 | .2386 | .1909 | .1432 | .0955 | .0477 | 0 | |
| | .6 | 0 | -.0110 | -.0220 | -.0330 | -.0440 | -.0550 | -.0660 | -.0770 | -.0880 | -.0990 | -.1100 | .0510 | .0080 | .0670 | .1260 | .1850 | .2440 | .1830 | .1220 | .0610 | 0 | |
| | .7 | 0 | -.0089 | -.0179 | -.0268 | -.0357 | -.0447 | -.0536 | -.0625 | -.0715 | -.0804 | -.0893 | .0444 | .0005 | .0455 | .0904 | .1353 | .1803 | .2252 | .1501 | .0751 | 0 | |
| | .8 | 0 | -.0063 | -.0126 | -.0189 | -.0251 | -.0314 | -.0377 | -.0440 | -.0503 | -.0566 | -.0628 | .0326 | .0023 | .0280 | .0583 | .0886 | .1189 | .1491 | .1794 | .0897 | 0 | |
| | .9 | 0 | -.0032 | -.0065 | -.0097 | -.0130 | -.0162 | -.0194 | -.0227 | -.0259 | -.0292 | -.0324 | .0172 | .0019 | .0133 | .0286 | .0438 | .0590 | .0743 | .0895 | .1048 | 0 | |
| C. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| + Area | | 0 | .0393 | .0686 | .0880 | .0973 | .0966 | .0859 | .0652 | .0345 | .0072 | 0 | .0075 | .0372 | .0825 | .1139 | .1309 | .1335 | .1217 | .0956 | .0550 | 0 | |
| - Area | | 0 | -.0098 | -.0196 | -.0295 | -.0393 | -.0491 | -.0589 | -.0687 | -.0785 | -.1017 | -.1550 | -.0822 | -.0460 | -.0398 | -.0341 | -.0284 | -.0227 | -.0170 | -.0114 | -.0057 | 0 | |
| Total Area | | 0 | .0295 | .0490 | .0585 | .0580 | .0475 | .0270 | -.0035 | -.0440 | -.0945 | -.1550 | -.0747 | -.0088 | .0427 | .0798 | .1025 | .1108 | .1047 | .0842 | .0493 | 0 | |

TABLE A2.2



| Unit load at | REACTIONS/P | | | SHEARS/P | | | | |
|--------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|---------|
| | R _A | R _B | R _C | V _{AB} | V _{BA} | V _{BC} | V _{CB} | |
| SPAN 1 | A. | 1.0000 | 0 | 0 | 1.0000 | 0 | 0 | 0 |
| | .1 | .8775 | .1413 | -.0187 | .8775 | -.1225 | .0187 | .0187 |
| | .2 | .7564 | .2800 | -.0364 | .7564 | -.2436 | .0364 | .0364 |
| | .3 | .6380 | .4138 | -.0517 | .6380 | -.3620 | .0517 | .0517 |
| | .4 | .5236 | .5400 | -.0636 | .5236 | -.4764 | .0636 | .0636 |
| | .5 | .4148 | .6563 | -.0710 | .4148 | -.5852 | .0710 | .0710 |
| | .6 | .3127 | .7600 | -.0727 | .3127 | -.6873 | .0727 | .0727 |
| | .7 | .2189 | .8487 | -.0676 | .2189 | -.7811 | .0676 | .0676 |
| | .8 | .1345 | .9200 | -.0545 | .1345 | -.8655 | .0545 | .0545 |
| .9 | .0611 | .9713 | -.0324 | .0611 | -.9389 | .0324 | .0324 | |
| SPAN 2 | B. | 0 | 1.0000 | 0 | 0 | -1.0 0 | 0 1.0 | 0 |
| | .1 | -.0560 | 1.0026 | .0534 | -.0560 | -.0560 | .9466 | -.0534 |
| | .2 | -.0943 | .9728 | .1215 | -.0943 | -.0943 | .8785 | -.1215 |
| | .3 | -.1168 | .9142 | .2026 | -.1168 | -.1168 | .7974 | -.2026 |
| | .4 | -.1257 | .8304 | .2953 | -.1257 | -.1257 | .7047 | -.2953 |
| | .5 | -.1227 | .7250 | .3977 | -.1227 | -.1227 | .6023 | -.3977 |
| | .6 | -.1100 | .6016 | .5084 | -.1100 | -.1100 | .4916 | -.5084 |
| | .7 | -.0893 | .4638 | .6255 | -.0893 | -.0893 | .3745 | -.6255 |
| | .8 | -.0628 | .3152 | .7476 | -.0628 | -.0628 | .2524 | -.7476 |
| | .9 | -.0324 | .1594 | .8730 | -.0324 | -.0324 | .1270 | -.8730 |
| | C. | 0 | 0 | 1.0000 | 0 | 0 | 0 | -1.0000 |
| + Area | | .4432 | 1.3842 | .5182 | .4432 | 0 | .7292 | .0473 |
| - Area | | -.0982 | 0 | -.0473 | -.0982 | -.6550 | 0 | -.5182 |
| Total Area | | .3450 | 1.3842 | .4709 | .3450 | -.6550 | .7292 | -.4709 |

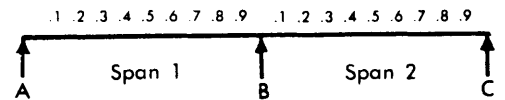
Influence coefficients — Two continuous spans.

L = Length of SHORTER spans; length of LONGER spans = NL.

N=1.2

| Unit load at | MOMENTS/PL | | | | | | | | | | | | | | | | | | | | | |
|--------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---|
| | SPAN 1 | | | | | | | | | | | SPAN 2 | | | | | | | | | | |
| | A. | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | B. | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | C. | |
| SPAN 1 | A. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0878 | .0757 | .0635 | .0514 | .0392 | .0271 | .0149 | .0028 | -.0094 | -.0215 | -.0194 | -.0172 | -.0151 | -.0129 | -.0108 | -.0086 | -.0065 | -.0043 | -.0022 | 0 |
| | .2 | 0 | .0758 | .1517 | .1275 | .1033 | .0791 | .0550 | .0308 | .0066 | -.0176 | -.0417 | -.0376 | -.0334 | -.0292 | -.0250 | -.0209 | -.0167 | -.0125 | -.0083 | -.0042 | 0 |
| | .3 | 0 | .0641 | .1281 | .1922 | .1563 | .1203 | .0844 | .0485 | .0125 | -.0234 | -.0593 | -.0534 | -.0475 | -.0415 | -.0356 | -.0297 | -.0237 | -.0178 | -.0119 | -.0059 | 0 |
| | .4 | 0 | .0527 | .1054 | .1581 | .2108 | .1635 | .1162 | .0689 | .0216 | -.0257 | -.0730 | -.0657 | -.0584 | -.0511 | -.0438 | -.0365 | -.0292 | -.0219 | -.0146 | -.0073 | 0 |
| | .5 | 0 | .0418 | .0837 | .1255 | .1674 | .2092 | .1511 | .0929 | .0348 | -.0234 | -.0815 | -.0734 | -.0652 | -.0571 | -.0489 | -.0408 | -.0326 | -.0245 | -.0163 | -.0082 | 0 |
| | .6 | 0 | .0317 | .0633 | .0950 | .1266 | .1583 | .1899 | .1216 | .0532 | -.0151 | -.0835 | -.0751 | -.0668 | -.0584 | -.0501 | -.0417 | -.0334 | -.0250 | -.0167 | -.0083 | 0 |
| | .7 | 0 | .0222 | .0445 | .0667 | .0890 | .1112 | .1334 | .1557 | .0779 | .0002 | -.0776 | -.0698 | -.0621 | -.0543 | -.0466 | -.0388 | -.0310 | -.0233 | -.0155 | -.0078 | 0 |
| | .8 | 0 | .0137 | .0275 | .0412 | .0550 | .0687 | .0824 | .0962 | .1099 | .0237 | -.0626 | -.0563 | -.0501 | -.0438 | -.0376 | -.0313 | -.0250 | -.0188 | -.0125 | -.0063 | 0 |
| .9 | 0 | .0063 | .0126 | .0188 | .0251 | .0314 | .0377 | .0440 | .0503 | .0565 | -.0372 | -.0335 | -.0297 | -.0260 | -.0223 | -.0186 | -.0149 | -.0112 | -.0074 | -.0037 | 0 | |
| SPAN 2 | B. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | -.0063 | -.0126 | -.0188 | -.0251 | -.0314 | -.0377 | -.0440 | -.0503 | -.0565 | -.0628 | .0605 | .0537 | .0470 | .0403 | .0336 | .0269 | .0202 | .0134 | .0067 | 0 |
| | .2 | 0 | -.0106 | -.0212 | -.0317 | -.0423 | -.0529 | -.0635 | -.0741 | -.0846 | -.0952 | -.1058 | .0088 | .1234 | .1079 | .0925 | .0771 | .0617 | .0463 | .0308 | .0154 | 0 |
| | .3 | 0 | -.0131 | -.0262 | -.0393 | -.0525 | -.0656 | -.0787 | -.0918 | -.1049 | -.1180 | -.1312 | -.0270 | .0771 | .1812 | .1553 | .1294 | .1035 | .0777 | .0518 | .0259 | 0 |
| | .4 | 0 | -.0141 | -.0282 | -.0423 | -.0564 | -.0705 | -.0846 | -.0988 | -.1129 | -.1270 | -.1411 | -.0490 | .0431 | .1352 | .2274 | .1895 | .1516 | .1137 | .0758 | .0379 | 0 |
| | .5 | 0 | -.0138 | -.0276 | -.0413 | -.0551 | -.0689 | -.0827 | -.0964 | -.1102 | -.1240 | -.1378 | -.0590 | .0198 | .0986 | .1773 | .2561 | .2049 | .1537 | .1024 | .0512 | 0 |
| | .6 | 0 | -.0123 | -.0247 | -.0370 | -.0494 | -.0617 | -.0741 | -.0864 | -.0988 | -.1111 | -.1234 | -.0591 | .0052 | .0696 | .1339 | .1983 | .2626 | .1970 | .1313 | .0657 | 0 |
| | .7 | 0 | -.0100 | -.0201 | -.0301 | -.0401 | -.0501 | -.0602 | -.0702 | -.0802 | -.0903 | -.1003 | -.0513 | -.0022 | .0468 | .0958 | .1449 | .1939 | .2429 | .1619 | .0810 | 0 |
| | .8 | 0 | -.0071 | -.0141 | -.0212 | -.0282 | -.0353 | -.0423 | -.0494 | -.0564 | -.0635 | -.0705 | -.0375 | -.0044 | .0286 | .0617 | .0947 | .1278 | .1608 | .1939 | .0969 | 0 |
| | .9 | 0 | -.0036 | -.0073 | -.0109 | -.0145 | -.0182 | -.0218 | -.0255 | -.0291 | -.0327 | -.0364 | -.0197 | -.0031 | .0135 | .0302 | .0468 | .0635 | .0801 | .0967 | .1134 | 0 |
| C. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| + Area | 0 | .0396 | .0691 | .0887 | .0983 | .0978 | .0874 | .0670 | .0365 | .0078 | .0 | .0082 | .0410 | .0939 | .1312 | .1515 | .1550 | .1416 | .1113 | .0641 | 0 | |
| - Area | 0 | -.0119 | -.0239 | -.0358 | -.0478 | -.0597 | -.0716 | -.0836 | -.0955 | -.1192 | -.1737 | -.0885 | -.0448 | -.0380 | -.0326 | -.0272 | -.0217 | -.0163 | -.0109 | -.0054 | 0 | |
| Total Area | 0 | .0277 | .0452 | .0529 | .0505 | .0381 | .0158 | -.0166 | -.0590 | -.1114 | -.1737 | -.0803 | -.0038 | .0559 | .0986 | .1243 | .1333 | .1253 | .1004 | .0587 | 0 | |

TABLE A2.3



| Unit load at | | REACTIONS/P | | | SHEARS/P | | | |
|--------------|-------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|
| | | R _A | R _B | R _C | V _{AB} | V _{BA} | V _{BC} | V _{CB} |
| SPAN 1 | A. | 1.0000 | 0 | 0 | 1.0000 | 0 | 0 | 0 |
| | .1 | .8785 | .1381 | -.0166 | .8785 | -.1215 | .0166 | .0166 |
| | .2 | .7583 | .2738 | -.0321 | .7583 | -.2417 | .0321 | .0321 |
| | .3 | .6407 | .4050 | -.0457 | .6407 | -.3593 | .0457 | .0457 |
| | .4 | .5270 | .5292 | -.0562 | .5270 | -.4730 | .0562 | .0562 |
| | .5 | .4185 | .6442 | -.0627 | .4185 | -.5815 | .0627 | .0627 |
| | .6 | .3165 | .7477 | -.0642 | .3165 | -.6835 | .0642 | .0642 |
| | .7 | .2224 | .8373 | -.0597 | .2224 | -.7776 | .0597 | .0597 |
| | .8 | .1374 | .9108 | -.0482 | .1374 | -.8626 | .0482 | .0482 |
| .9 | .0628 | .9658 | -.0286 | .0628 | -.9372 | .0286 | .0286 | |
| SPAN 2 | B. | 0 | 1.0000 | 0 | 0 | -1.0 0 | 0 1.0 | 0 |
| | .1 | -.0628 | 1.0112 | .0517 | -.0628 | -.0628 | .9483 | -.0517 |
| | .2 | -.1058 | .9872 | .1186 | -.1058 | -.1058 | .8814 | -.1186 |
| | .3 | -.1312 | .9320 | .1991 | -.1312 | -.1312 | .8009 | -.1991 |
| | .4 | -.1411 | .8496 | .2915 | -.1411 | -.1411 | .7085 | -.2915 |
| | .5 | -.1378 | .7438 | .3940 | -.1378 | -.1378 | .6060 | -.3940 |
| | .6 | -.1234 | .6184 | .5050 | -.1234 | -.1234 | .4950 | -.5050 |
| | .7 | -.1003 | .4774 | .6228 | -.1003 | -.1003 | .3772 | -.6228 |
| | .8 | -.0705 | .3248 | .7457 | -.0705 | -.0705 | .2543 | -.7457 |
| | .9 | -.0364 | .1644 | .8720 | -.0364 | -.0364 | .1280 | -.8720 |
| C. | 0 | 0 | 1.0000 | 0 | 0 | 0 | -1.0000 | |
| +Area | | .4457 | 1.4574 | .5582 | .4457 | 0 | .7837 | .0418 |
| -Area | | -.1194 | 0 | -.0418 | .1194 | -.6737 | 0 | -.5582 |
| Total Area | | .3263 | 1.4574 | .5164 | .3263 | -.6737 | .7837 | -.5164 |

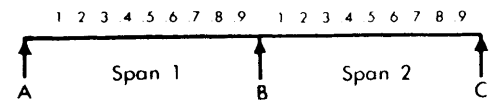
Influence coefficients — Two continuous spans.

L = Length of SHORTER spans; length of LONGER spans = NL.

N=1.3

| Unit load at | | MOMENTS/PL | | | | | | | | | | | | | | | | | | | | |
|--------------|----|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----|
| | | SPAN 1 | | | | | | | | | | SPAN 2 | | | | | | | | | | |
| | | A. | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | B. | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | C. |
| SPAN 1 | A. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | .1 | 0 | .0879 | .0759 | .0638 | .0518 | .0397 | .0276 | .0156 | .0035 | -.0086 | -.0206 | -.0186 | -.0165 | -.0144 | -.0124 | -.0103 | -.0082 | -.0062 | -.0041 | -.0021 | 0 |
| | .2 | 0 | .0760 | .1520 | .1280 | .1040 | .0800 | .0560 | .0320 | .0080 | -.0160 | -.0400 | -.0360 | -.0320 | -.0280 | -.0240 | -.0200 | -.0160 | -.0120 | -.0080 | -.0040 | 0 |
| | .3 | 0 | .0643 | .1286 | .1929 | .1573 | .1216 | .0859 | .0502 | .0145 | -.0212 | -.0569 | -.0512 | -.0455 | -.0398 | -.0341 | -.0284 | -.0227 | -.0171 | -.0114 | -.0057 | 0 |
| | .4 | 0 | .0530 | .1060 | .1590 | .2120 | .1650 | .1180 | .0710 | .0240 | -.0230 | -.0700 | -.0630 | -.0560 | -.0490 | -.0420 | -.0350 | -.0280 | -.0210 | -.0140 | -.0070 | 0 |
| | .5 | 0 | .0422 | .0844 | .1266 | .1688 | .2109 | .1531 | .0953 | .0375 | -.0203 | -.0781 | -.0703 | -.0625 | -.0547 | -.0469 | -.0391 | -.0312 | -.0234 | -.0156 | -.0078 | 0 |
| | .6 | 0 | .0320 | .0640 | .0960 | .1280 | .1600 | .1920 | .1240 | .0560 | -.0120 | -.0800 | -.0720 | -.0640 | -.0560 | -.0480 | -.0400 | -.0320 | -.0240 | -.0160 | -.0080 | 0 |
| | .7 | 0 | .0226 | .0451 | .0677 | .0903 | .1128 | .1354 | .1579 | .0805 | .0031 | -.0744 | -.0669 | -.0595 | -.0521 | -.0446 | -.0372 | -.0297 | -.0223 | -.0149 | -.0074 | 0 |
| | .8 | 0 | .0140 | .0280 | .0420 | .0560 | .0700 | .0840 | .0980 | .1120 | .0260 | -.0600 | -.0540 | -.0480 | -.0420 | -.0360 | -.0300 | -.0240 | -.0180 | -.0120 | -.0060 | 0 |
| .9 | 0 | .0064 | .0129 | .0193 | .0257 | .0322 | .0386 | .0451 | .0515 | .0579 | -.0356 | -.0321 | -.0285 | -.0249 | -.0214 | -.0178 | -.0143 | -.0107 | -.0071 | -.0036 | 0 | |
| SPAN 2 | B. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | -.0070 | -.0140 | -.0209 | -.0279 | -.0349 | -.0419 | -.0489 | -.0559 | -.0628 | -.0698 | .0632 | .0561 | .0491 | .0421 | .0351 | .0281 | .0211 | .0140 | .0070 | 0 |
| | .2 | 0 | -.0118 | -.0235 | -.0353 | -.0470 | -.0588 | -.0706 | -.0823 | -.0941 | -.1058 | -.1176 | .0062 | .1299 | .1137 | .0974 | .0812 | .0650 | .0487 | .0325 | .0162 | 0 |
| | .3 | 0 | -.0146 | -.0292 | -.0437 | -.0583 | -.0729 | -.0875 | -.1020 | -.1166 | -.1312 | -.1458 | -.0332 | .0794 | .1920 | .1645 | .1371 | .1097 | .0823 | .0548 | .0274 | 0 |
| | .4 | 0 | -.0157 | -.0314 | -.0470 | -.0627 | -.0784 | -.0941 | -.1098 | -.1254 | -.1411 | -.1568 | -.0571 | .0426 | .1422 | .2419 | .2016 | .1613 | .1210 | .0806 | .0403 | 0 |
| | .5 | 0 | -.0153 | -.0306 | -.0459 | -.0612 | -.0766 | -.0919 | -.1072 | -.1225 | -.1378 | -.1531 | -.0678 | .0175 | .1028 | .1881 | .2734 | .2188 | .1641 | .1094 | .0547 | 0 |
| | .6 | 0 | -.0137 | -.0274 | -.0412 | -.0549 | -.0686 | -.0823 | -.0960 | -.1098 | -.1235 | -.1372 | -.0675 | .0022 | .0720 | .1417 | .2114 | .2811 | .2108 | .1406 | .0703 | 0 |
| | .7 | 0 | -.0111 | -.0223 | -.0334 | -.0446 | -.0557 | -.0669 | -.0780 | -.0892 | -.1003 | -.1115 | -.0583 | -.0052 | .0480 | .1011 | .1543 | .2074 | .2606 | .1737 | .0869 | 0 |
| | .8 | 0 | -.0078 | -.0157 | -.0235 | -.0314 | -.0392 | -.0470 | -.0549 | -.0627 | -.0706 | -.0784 | -.0426 | -.0067 | .0291 | .0650 | .1008 | .1366 | .1725 | .2083 | .1042 | 0 |
| .9 | 0 | -.0040 | -.0081 | -.0121 | -.0162 | -.0202 | -.0243 | -.0283 | -.0323 | -.0364 | -.0404 | -.0224 | -.0043 | .0137 | .0317 | .0498 | .0678 | .0859 | .1039 | .1220 | 0 | |
| C. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| + Area | | 0 | .0398 | .0696 | .0894 | .0992 | .0990 | .0888 | .0685 | .0383 | .0083 | 0 | .0089 | .0448 | .1058 | .1495 | .1735 | .1780 | .1629 | .1282 | .0739 | 0 |
| - Area | | 0 | -.0143 | -.0286 | -.0429 | -.0572 | -.0715 | -.0858 | -.1000 | -.1143 | -.1388 | -.1950 | -.0962 | -.0440 | -.0365 | -.0312 | -.0260 | -.0208 | -.0156 | -.0104 | -.0052 | 0 |
| Total Area | | 0 | .0255 | .0410 | .0465 | .0420 | .0275 | .0030 | -.0315 | -.0760 | -.1305 | -.1950 | -.0873 | .0008 | .0693 | .1183 | .1475 | .1572 | .1473 | .1178 | .0687 | 0 |

TABLE A2.4



| Unit load at | REACTIONS/P | | | SHEARS/P | | | | |
|--------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|--------|
| | R _A | R _B | R _C | V _{AB} | V _{BA} | V _{BC} | V _{CB} | |
| SPAN 1 | A. | 1.0000 | 0 | 0 | 1.0000 | 0 | 0 | 0 |
| | .1 | .8794 | .1354 | -.0147 | .8794 | -.1206 | .0147 | .0147 |
| | .2 | .7600 | .2686 | -.0286 | .7600 | -.2400 | .0286 | .0286 |
| | .3 | .6431 | .3975 | -.0406 | .6431 | -.3569 | .0406 | .0406 |
| | .4 | .5300 | .5200 | -.0500 | .5300 | -.4700 | .0500 | .0500 |
| | .5 | .4219 | .6339 | -.0558 | .4219 | -.5781 | .0558 | .0558 |
| | .6 | .3200 | .7371 | -.0571 | .3200 | -.6800 | .0571 | .0571 |
| | .7 | .2256 | .8275 | -.0531 | .2256 | -.7744 | .0531 | .0531 |
| | .8 | .1400 | .9029 | -.0429 | .1400 | -.8600 | .0429 | .0429 |
| | .9 | .0644 | .9611 | -.0254 | .0644 | -.9356 | .0254 | .0254 |
| SPAN 2 | B. | 0 | 1.0000 | 0 | 0 | -1.0 0 | 0 1.0 | 0 |
| | .1 | -.0698 | 1.0197 | .0501 | -.0698 | -.0698 | .9499 | -.0501 |
| | .2 | -.1176 | 1.0016 | .1160 | -.1176 | -.1176 | .8840 | -.1160 |
| | .3 | -.1458 | .9499 | .1959 | -.1458 | -.1458 | .8041 | -.1959 |
| | .4 | -.1568 | .8688 | .2880 | -.1568 | -.1568 | .7120 | -.2880 |
| | .5 | -.1531 | .7625 | .3906 | -.1531 | -.1531 | .6094 | -.3906 |
| | .6 | -.1372 | .6352 | .5020 | -.1372 | -.1372 | .4980 | -.5020 |
| | .7 | -.1115 | .4911 | .6204 | -.1115 | -.1115 | .3796 | -.6204 |
| | .8 | -.0784 | .3344 | .7440 | -.0784 | -.0784 | .2560 | -.7440 |
| | .9 | -.0404 | .1693 | .8711 | -.0404 | -.0404 | .1289 | -.8711 |
| C. | 0 | 0 | 1.0000 | 0 | 0 | 0 | -1.0000 | |
| + Area | .4479 | 1.5343 | .5979 | .4479 | 0 | .8393 | .0372 | |
| - Area | -.1429 | 0 | -.0372 | -.1429 | -.6950 | 0 | -.5979 | |
| Total Area | .3050 | 1.5343 | .5607 | .3050 | -.6950 | .8393 | -.5607 | |

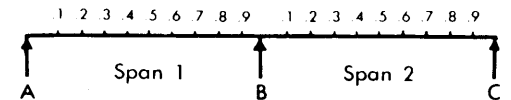
Influence coefficients — Two continuous spans.

L = Length of SHORTER spans; length of LONGER spans = NL.

N=1.4

| Unit load at | | MOMENTS/PL | | | | | | | | | | | | | | | | | | | | |
|--------------|----|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----|
| | | SPAN 1 | | | | | | | | | | SPAN 2 | | | | | | | | | | |
| | | A. | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | B. | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | C. |
| SPAN 1 | A. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0880 | .0760 | .0641 | .0521 | .0401 | .0281 | .0161 | .0042 | -.0078 | -.0198 | -.0178 | -.0158 | -.0139 | -.0119 | -.0099 | -.0079 | -.0059 | -.0040 | -.0020 | 0 |
| | .2 | 0 | .0762 | .1523 | .1285 | .1046 | .0808 | .0570 | .0331 | .0093 | -.0146 | -.0384 | -.0346 | -.0307 | -.0269 | -.0230 | -.0192 | -.0154 | -.0115 | -.0077 | -.0038 | 0 |
| | .3 | 0 | .0645 | .1291 | .1936 | .1582 | .1227 | .0872 | .0518 | .0163 | -.0191 | -.0546 | -.0491 | -.0437 | -.0382 | -.0328 | -.0273 | -.0218 | -.0164 | -.0109 | -.0055 | 0 |
| | .4 | 0 | .0533 | .1066 | .1598 | .2131 | .1664 | .1197 | .0730 | .0262 | -.0205 | -.0672 | -.0605 | -.0538 | -.0470 | -.0403 | -.0336 | -.0269 | -.0202 | -.0134 | -.0067 | 0 |
| | .5 | 0 | .0425 | .0850 | .1275 | .1700 | .2125 | .1550 | .0975 | .0400 | -.0175 | -.0750 | -.0675 | -.0600 | -.0525 | -.0450 | -.0375 | -.0300 | -.0225 | -.0150 | -.0075 | 0 |
| | .6 | 0 | .0323 | .0646 | .0970 | .1293 | .1616 | .1939 | .1262 | .0586 | -.0091 | -.0708 | -.0691 | -.0614 | -.0538 | -.0461 | -.0384 | -.0307 | -.0230 | -.0154 | -.0077 | 0 |
| | .7 | 0 | .0229 | .0457 | .0686 | .0914 | .1143 | .1372 | .1600 | .0829 | .0057 | -.0714 | -.0643 | -.0571 | -.0500 | -.0428 | -.0357 | -.0286 | -.0214 | -.0143 | -.0071 | 0 |
| | .8 | 0 | .0142 | .0285 | .0427 | .0570 | .0712 | .0854 | .0997 | .1139 | .0282 | -.0576 | -.0518 | -.0461 | -.0403 | -.0346 | -.0288 | -.0230 | -.0173 | -.0115 | -.0058 | 0 |
| | .9 | 0 | .0066 | .0132 | .0197 | .0263 | .0329 | .0395 | .0461 | .0526 | .0592 | -.0342 | -.0308 | -.0274 | -.0239 | -.0205 | -.0171 | -.0137 | -.0103 | -.0068 | -.0034 | 0 |
| SPAN 2 | B. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | -.0077 | -.0154 | -.0231 | -.0308 | -.0385 | -.0462 | -.0539 | -.0616 | -.0693 | -.0770 | .0657 | .0584 | .0511 | .0438 | .0365 | .0292 | .0219 | .0146 | .0073 | 0 |
| | .2 | 0 | -.0130 | -.0259 | -.0389 | -.0518 | -.0648 | -.0778 | -.0907 | -.1037 | -.1166 | -.1296 | .0034 | .1363 | .1193 | .1022 | .0852 | .0682 | .0511 | .0341 | .0170 | 0 |
| | .3 | 0 | -.0161 | -.0321 | -.0482 | -.0643 | -.0803 | -.0964 | -.1125 | -.1285 | -.1446 | -.1607 | -.0396 | .0815 | .2025 | .1736 | .1447 | .1157 | .0868 | .0579 | .0289 | 0 |
| | .4 | 0 | -.0173 | -.0346 | -.0518 | -.0691 | -.0864 | -.1037 | -.1210 | -.1382 | -.1555 | -.1728 | -.0655 | .0418 | .1490 | .2563 | .2136 | .1709 | .1282 | .0854 | .0427 | 0 |
| | .5 | 0 | -.0169 | -.0337 | -.0506 | -.0675 | -.0844 | -.1013 | -.1181 | -.1350 | -.1519 | -.1688 | -.0769 | .0150 | .1069 | .1988 | .2906 | .2325 | .1744 | .1163 | .0581 | 0 |
| | .6 | 0 | -.0151 | -.0302 | -.0454 | -.0605 | -.0756 | -.0907 | -.1058 | -.1210 | -.1361 | -.1512 | -.0761 | -.0010 | .0742 | .1493 | .2244 | .2995 | .2246 | .1498 | .0749 | 0 |
| | .7 | 0 | -.0123 | -.0246 | -.0369 | -.0491 | -.0614 | -.0737 | -.0860 | -.0983 | -.1106 | -.1228 | -.0656 | -.0083 | .0490 | .1063 | .1636 | .2209 | .2781 | .1854 | .0927 | 0 |
| | .8 | 0 | -.0086 | -.0173 | -.0259 | -.0346 | -.0432 | -.0518 | -.0605 | -.0691 | -.0778 | -.0864 | -.0478 | -.0091 | .0295 | .0682 | .1068 | .1454 | .1841 | .2227 | .1114 | 0 |
| | .9 | 0 | -.0045 | -.0089 | -.0134 | -.0178 | -.0223 | -.0267 | -.0312 | -.0356 | -.0401 | -.0445 | -.0251 | -.0056 | .0138 | .0333 | .0527 | .0722 | .0916 | .1111 | .1305 | 0 |
| C. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| +Area | | 0 | .0400 | .0700 | .0900 | .1000 | .1000 | .0900 | .0700 | .0400 | .0089 | 0 | .0096 | .0488 | .1181 | .1688 | .1969 | .2025 | .1856 | .1463 | .0844 | 0 |
| -Area | | 0 | -.0169 | -.0337 | -.0506 | -.0675 | -.0844 | -.1012 | -.1181 | -.1350 | -.1608 | -.2188 | -.1052 | -.0438 | -.0350 | -.0300 | -.0250 | -.0200 | -.0150 | -.0100 | -.0050 | 0 |
| Total Area | | 0 | .0231 | .0363 | .0394 | .0325 | .0156 | -.0112 | -.0481 | -.0950 | -.1519 | -.2188 | -.0956 | .0050 | .0831 | .1388 | .1719 | .1825 | .1706 | .1363 | .0794 | 0 |

TABLE A2.5



| Unit load at | | REACTIONS/P | | | SHEARS/P | | | |
|--------------|------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|
| | | R _A | R _B | R _C | V _{AB} | V _{BA} | V _{BC} | V _{CB} |
| SPAN 1 | A. | 1.0000 | 0 | 0 | 1.0000 | 0 | 0 | 0 |
| | .1 | .8802 | .1330 | -.0132 | .8802 | -.1198 | .0132 | .0132 |
| | .2 | .7616 | .2640 | -.0256 | .7616 | -.2384 | .0256 | .0256 |
| | .3 | .6454 | .3910 | -.0364 | .6454 | -.3546 | .0364 | .0364 |
| | .4 | .5328 | .5120 | -.0448 | .5328 | -.4672 | .0448 | .0448 |
| | .5 | .4250 | .6250 | -.0500 | .4250 | -.5750 | .0500 | .0500 |
| | .6 | .3232 | .7280 | -.0512 | .3232 | -.6768 | .0512 | .0512 |
| | .7 | .2286 | .8190 | -.0476 | .2286 | -.7714 | .0476 | .0476 |
| | .8 | .1424 | .8960 | -.0384 | .1424 | -.8576 | .0384 | .0384 |
| | .9 | .0658 | .9570 | -.0228 | .0658 | -.9342 | .0228 | .0228 |
| SPAN 2 | B. | 0 | 1.0000 | 0 | 0 | -1.0 0 | 0 1.0 | 0 |
| | .1 | -.0770 | 1.0282 | .0487 | -.0770 | -.0770 | .9513 | -.0487 |
| | .2 | -.1296 | 1.0160 | .1136 | -.1296 | -.1296 | .8864 | -.1136 |
| | .3 | -.1607 | .9677 | .1929 | -.1607 | -.1607 | .8071 | -.1929 |
| | .4 | -.1728 | .8880 | .2848 | -.1728 | -.1728 | .7152 | -.2848 |
| | .5 | -.1688 | .7813 | .3875 | -.1688 | -.1688 | .6125 | -.3875 |
| | .6 | -.1512 | .6520 | .4992 | -.1512 | -.1512 | .5008 | -.4992 |
| | .7 | -.1229 | .5047 | .6181 | -.1229 | -.1229 | .3819 | -.6181 |
| | .8 | -.0864 | .3440 | .7424 | -.0864 | -.0864 | .2576 | -.7424 |
| | .9 | -.0446 | .1743 | .8703 | -.0446 | -.0446 | .1297 | -.8703 |
| | C. | 0 | 0 | 1.0000 | 0 | 0 | 0 | -1.0000 |
| | +Area | .4500 | 1.6146 | .6375 | .4500 | .0 | .8958 | .0333 |
| | -Area | -.1688 | 0 | -.0333 | -.1688 | -.7188 | 0 | -.6375 |
| | Total Area | .2812 | 1.6146 | .6042 | .2812 | -.7188 | .8958 | -.6042 |

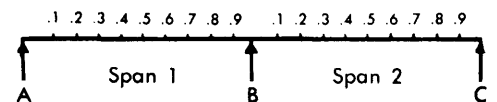
Influence coefficients — Two continuous spans.

L = Length of SHORTER spans; length of LONGER spans = NL.

N=1.5

| Unit load at | MOMENTS/PL | | | | | | | | | | | | | | | | | | | | | |
|--------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---|
| | SPAN 1 | | | | | | | | | | | SPAN 2 | | | | | | | | | | |
| | A. | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | B. | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | C. | |
| SPAN 1 | A. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0881 | .0762 | .0643 | .0524 | .0405 | .0286 | .0167 | .0048 | -.0071 | -.0190 | -.0171 | -.0152 | -.0133 | -.0114 | -.0095 | -.0076 | -.0057 | -.0038 | -.0019 | 0 |
| | .2 | 0 | .0763 | .1526 | .1289 | .1052 | .0815 | .0578 | .0342 | .0105 | -.0132 | -.0369 | -.0332 | -.0295 | -.0258 | -.0222 | -.0185 | -.0148 | -.0111 | -.0074 | -.0037 | 0 |
| | .3 | 0 | .0648 | .1295 | .1943 | .1590 | .1238 | .0885 | .0533 | .0180 | -.0172 | -.0525 | -.0472 | -.0420 | -.0367 | -.0315 | -.0262 | -.0210 | -.0157 | -.0105 | -.0052 | 0 |
| | .4 | 0 | .0535 | .1071 | .1606 | .2142 | .1677 | .1212 | .0748 | .0283 | -.0182 | -.0646 | -.0582 | -.0517 | -.0452 | -.0388 | -.0323 | -.0258 | -.0194 | -.0129 | -.0065 | 0 |
| | .5 | 0 | .0428 | .0856 | .1284 | .1712 | .2139 | .1567 | .0995 | .0423 | -.0149 | -.0721 | -.0649 | -.0577 | -.0505 | -.0433 | -.0361 | -.0288 | -.0216 | -.0144 | -.0072 | 0 |
| | .6 | 0 | .0326 | .0652 | .0978 | .1305 | .1631 | .1957 | .1283 | .0609 | -.0065 | -.0738 | -.0665 | -.0591 | -.0517 | -.0443 | -.0369 | -.0295 | -.0222 | -.0148 | -.0074 | 0 |
| | .7 | 0 | .0231 | .0463 | .0694 | .0925 | .1157 | .1388 | .1619 | .0851 | .0082 | -.0687 | -.0618 | -.0549 | -.0481 | -.0412 | -.0343 | -.0275 | -.0206 | -.0137 | -.0069 | 0 |
| | .8 | 0 | .0145 | .0289 | .0434 | .0578 | .0723 | .0868 | .1012 | .1157 | .0302 | -.0554 | -.0498 | -.0443 | -.0388 | -.0332 | -.0277 | -.0222 | -.0166 | -.0111 | -.0055 | 0 |
| | .9 | 0 | .0067 | .0134 | .0201 | .0268 | .0336 | .0403 | .0470 | .0537 | .0604 | -.0329 | -.0296 | -.0263 | -.0230 | -.0197 | -.0164 | -.0132 | -.0099 | -.0066 | -.0033 | 0 |
| SPAN 2 | B. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | -.0084 | -.0168 | -.0253 | -.0337 | -.0421 | -.0505 | -.0589 | -.0673 | -.0758 | -.0842 | -.0682 | -.0607 | -.0531 | -.0455 | -.0379 | -.0303 | -.0227 | -.0152 | -.0076 | 0 |
| | .2 | 0 | -.0142 | -.0284 | -.0425 | -.0567 | -.0709 | -.0851 | -.0992 | -.1134 | -.1276 | -.1418 | -.0004 | -.1426 | -.1248 | -.1069 | -.0891 | -.0713 | -.0535 | -.0356 | -.0178 | 0 |
| | .3 | 0 | -.0176 | -.0352 | -.0527 | -.0703 | -.0879 | -.1055 | -.1230 | -.1406 | -.1582 | -.1758 | -.0462 | -.0834 | -.2130 | -.1825 | -.1521 | -.1217 | -.0913 | -.0608 | -.0304 | 0 |
| | .4 | 0 | -.0189 | -.0378 | -.0567 | -.0756 | -.0945 | -.1134 | -.1323 | -.1512 | -.1701 | -.1890 | -.0741 | -.0408 | -.1557 | -.2706 | -.2255 | -.1804 | -.1353 | -.0902 | -.0451 | 0 |
| | .5 | 0 | -.0185 | -.0369 | -.0554 | -.0738 | -.0923 | -.1108 | -.1292 | -.1477 | -.1662 | -.1846 | -.0862 | -.0123 | -.1108 | -.2092 | -.3077 | -.2462 | -.1846 | -.1231 | -.0615 | 0 |
| | .6 | 0 | -.0165 | -.0331 | -.0496 | -.0662 | -.0827 | -.0992 | -.1158 | -.1323 | -.1489 | -.1654 | -.0849 | -.0043 | -.0762 | -.1568 | -.2373 | -.3178 | -.2384 | -.1589 | -.0795 | 0 |
| | .7 | 0 | -.0134 | -.0269 | -.0403 | -.0538 | -.0672 | -.0806 | -.0941 | -.1075 | -.1210 | -.1344 | -.0730 | -.0115 | -.0499 | -.1114 | -.1728 | -.2342 | -.2957 | -.1971 | -.0986 | 0 |
| | .8 | 0 | -.0095 | -.0189 | -.0284 | -.0378 | -.0473 | -.0567 | -.0662 | -.0756 | -.0851 | -.0945 | -.0531 | -.0116 | -.0298 | -.0713 | -.1127 | -.1542 | -.1956 | -.2371 | -.1185 | 0 |
| | .9 | 0 | -.0049 | -.0097 | -.0146 | -.0195 | -.0244 | -.0292 | -.0341 | -.0390 | -.0439 | -.0487 | -.0279 | -.0070 | -.0139 | -.0348 | -.0556 | -.0765 | -.0974 | -.1183 | -.1391 | 0 |
| C. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| + Area | 0 | .0402 | .0704 | .0906 | .1008 | .1010 | .0912 | .0713 | .0415 | .0094 | .0 | .0103 | .0528 | .1310 | .1890 | .2215 | .2284 | .2097 | .1654 | .0955 | 0 | |
| - Area | 0 | -.0197 | -.0394 | -.0591 | -.0788 | -.0985 | -.1182 | -.1378 | -.1575 | -.1849 | -.2450 | -.1156 | -.0440 | -.0337 | -.0288 | -.0240 | -.0192 | -.0144 | -.0096 | -.0048 | 0 | |
| Total Area | 0 | .0205 | .0310 | .0315 | .0220 | .0025 | -.0270 | -.0665 | -.1160 | -.1755 | -.2450 | -.1053 | .0088 | .0973 | .1602 | .1975 | .2092 | .1953 | .1558 | .0907 | 0 | |

TABLE A2.6



| Unit load at | REACTIONS/P | | | SHEARS/P | | | | |
|--------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|---------|
| | R _A | R _B | R _C | V _{AB} | V _{BA} | V _{BC} | V _{CB} | |
| SPAN 1 | A. | 1.0000 | 0 | 0 | 1.0000 | 0 | 0 | 0 |
| | .1 | .8810 | .1309 | -.0119 | .8810 | -.1190 | .0119 | .0119 |
| | .2 | .7631 | .2600 | -.0231 | .7631 | -.2369 | .0231 | .0231 |
| | .3 | .6475 | .3853 | -.0328 | .6475 | -.3525 | .0328 | .0328 |
| | .4 | .5354 | .5050 | -.0404 | .5354 | -.4646 | .0404 | .0404 |
| | .5 | .4279 | .6172 | -.0451 | .4279 | -.5721 | .0451 | .0451 |
| | .6 | .3262 | .7200 | -.0462 | .3262 | -.6738 | .0462 | .0462 |
| | .7 | .2313 | .8116 | -.0429 | .2313 | -.7687 | .0429 | .0429 |
| | .8 | .1446 | .8900 | -.0346 | .1446 | -.8554 | .0346 | .0346 |
| | .9 | .0671 | .9534 | -.0206 | .0671 | -.9329 | .0206 | .0206 |
| SPAN 2 | B. | 0 | 1.0000 | 0 | 0 | -1.0 0 | 0 1.0 | 0 |
| | .1 | -.0842 | 1.0368 | .0474 | -.0842 | -.0842 | .9526 | -.0474 |
| | .2 | -.1418 | 1.0304 | .1114 | -.1418 | -.1418 | .8886 | -.1114 |
| | .3 | -.1758 | .9856 | .1902 | -.1758 | -.1758 | .8098 | -.1902 |
| | .4 | -.1890 | .9072 | .2818 | -.1890 | -.1890 | .7182 | -.2818 |
| | .5 | -.1846 | .8000 | .3846 | -.1846 | -.1846 | .6154 | -.3846 |
| | .6 | -.1654 | .6688 | .4966 | -.1654 | -.1654 | .5034 | -.4966 |
| | .7 | -.1344 | .5184 | .6160 | -.1344 | -.1344 | .3840 | -.6160 |
| | .8 | -.0945 | .3536 | .7409 | -.0945 | -.0945 | .2591 | -.7409 |
| | .9 | -.0487 | .1792 | .8695 | -.0487 | -.0487 | .1305 | -.8695 |
| | C. | 0 | 0 | 1.0000 | 0 | 0 | 0 | -1.0000 |
| + Area | | .4519 | 1.6981 | .6769 | .4519 | .0 | .9531 | .0300 |
| - Area | | -.1969 | 0 | -.0300 | -.1969 | -.7450 | 0 | -.6769 |
| Total Area | | .2550 | 1.6981 | .6469 | .2550 | -.7450 | .9531 | -.6469 |

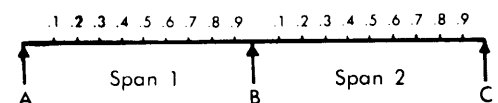
Influence coefficients — Two continuous spans.

L = Length of SHORTER spans; length of LONGER spans = NL.

N=1.6

| Unit load at | MOMENTS/PL | | | | | | | | | | | | | | | | | | | | | |
|--------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---|
| | SPAN 1 | | | | | | | | | | SPAN 2 | | | | | | | | | | | |
| | A. | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | B. | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | C. | |
| SPAN 1 | A. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0882 | .0763 | .0645 | .0527 | .0408 | .0290 | .0172 | .0053 | -.0065 | -.0183 | -.0165 | -.0147 | -.0128 | -.0110 | -.0092 | -.0073 | -.0055 | -.0037 | -.0018 | 0 |
| | .2 | 0 | .0764 | .1529 | .1293 | .1058 | .0822 | .0587 | .0351 | .0116 | -.0120 | -.0356 | -.0320 | -.0284 | -.0249 | -.0213 | -.0178 | -.0142 | -.0107 | -.0071 | -.0036 | 0 |
| | .3 | 0 | .0649 | .1299 | .1948 | .1598 | .1247 | .0897 | .0546 | .0196 | -.0155 | -.0506 | -.0455 | -.0404 | -.0354 | -.0303 | -.0253 | -.0202 | -.0152 | -.0101 | -.0051 | 0 |
| | .4 | 0 | .0538 | .1076 | .1613 | .2151 | .1689 | .1227 | .0764 | .0302 | -.0160 | -.0622 | -.0560 | -.0498 | -.0436 | -.0373 | -.0311 | -.0249 | -.0187 | -.0124 | -.0062 | 0 |
| | .5 | 0 | .0431 | .0861 | .1292 | .1722 | .2153 | .1583 | .1014 | .0444 | -.0125 | -.0694 | -.0625 | -.0556 | -.0486 | -.0417 | -.0347 | -.0278 | -.0208 | -.0139 | -.0069 | 0 |
| | .6 | 0 | .0329 | .0658 | .0987 | .1316 | .1644 | .1973 | .1302 | .0631 | -.0040 | -.0711 | -.0640 | -.0569 | -.0498 | -.0427 | -.0356 | -.0284 | -.0213 | -.0142 | -.0071 | 0 |
| | .7 | 0 | .0234 | .0468 | .0702 | .0936 | .1169 | .1403 | .1637 | .0871 | .0105 | -.0661 | -.0595 | -.0529 | -.0463 | -.0397 | -.0331 | -.0264 | -.0198 | -.0132 | -.0066 | 0 |
| | .8 | 0 | .0147 | .0293 | .0440 | .0587 | .0733 | .0880 | .1027 | .1173 | .0320 | -.0533 | -.0480 | -.0427 | -.0373 | -.0320 | -.0267 | -.0213 | -.0160 | -.0107 | -.0053 | 0 |
| .9 | 0 | .0068 | .0137 | .0205 | .0273 | .0342 | .0410 | .0478 | .0547 | .0615 | -.0317 | -.0285 | -.0253 | -.0222 | -.0190 | -.0158 | -.0127 | -.0095 | -.0063 | -.0032 | 0 | |
| SPAN 2 | B. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | -.0092 | -.0183 | -.0275 | -.0366 | -.0458 | -.0549 | -.0641 | -.0732 | -.0824 | -.0915 | .0706 | .0628 | .0549 | .0471 | .0392 | .0314 | .0235 | .0157 | .0078 | 0 |
| | .2 | 0 | -.0154 | -.0308 | -.0462 | -.0617 | -.0771 | -.0925 | -.1079 | -.1233 | -.1387 | -.1541 | -.0027 | .1487 | .1301 | .1115 | .0929 | .0743 | .0558 | .0372 | .0186 | 0 |
| | .3 | 0 | -.0191 | -.0382 | -.0573 | -.0764 | -.0955 | -.1146 | -.1337 | -.1528 | -.1720 | -.1911 | -.0530 | .0852 | .2233 | .1914 | .1595 | .1276 | .0957 | .0638 | .0319 | 0 |
| | .4 | 0 | -.0206 | -.0411 | -.0617 | -.0822 | -.1028 | -.1233 | -.1439 | -.1644 | -.1850 | -.2055 | -.0830 | .0396 | .1621 | .2847 | .2372 | .1898 | .1423 | .0949 | .0474 | 0 |
| | .5 | 0 | -.0201 | -.0401 | -.0602 | -.0803 | -.1003 | -.1204 | -.1405 | -.1606 | -.1806 | -.2007 | -.0956 | .0094 | -.1145 | .2196 | .3247 | .2597 | .1948 | .1299 | .0649 | 0 |
| | .6 | 0 | -.0180 | -.0360 | -.0539 | -.0719 | -.0899 | -.1079 | -.1259 | -.1439 | -.1618 | -.1798 | -.0938 | -.0079 | -.0781 | .1641 | .2501 | .3361 | .2521 | .1680 | .0840 | 0 |
| | .7 | 0 | -.0146 | -.0292 | -.0438 | -.0584 | -.0731 | -.0877 | -.1023 | -.1169 | -.1315 | -.1461 | -.0805 | -.0149 | .0507 | .1163 | .1819 | .2476 | .3132 | .2088 | .1044 | 0 |
| | .8 | 0 | -.0103 | -.0206 | -.0308 | -.0411 | -.0514 | -.0617 | -.0719 | -.0822 | -.0925 | -.1028 | -.0585 | -.0142 | .0301 | .0743 | .1186 | .1629 | .2072 | .2514 | .1257 | 0 |
| .9 | 0 | -.0053 | -.0106 | -.0159 | -.0212 | -.0265 | -.0318 | -.0371 | -.0424 | -.0477 | -.0530 | -.0307 | -.0084 | .0139 | .0362 | .0585 | .0808 | .1031 | .1254 | .1477 | 0 | |
| C. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| +Area | 0 | .0404 | .0707 | .0911 | .1015 | .1019 | .0922 | .0726 | .0430 | .0100 | 0 | .0111 | .0570 | .1442 | .2103 | .2475 | .2558 | .2352 | .1857 | .1073 | 0 | |
| -Area | 0 | -.0227 | -.0455 | -.0682 | -.0910 | -.1137 | -.1365 | -.1592 | -.1820 | -.2114 | -.2737 | -.1274 | -.0448 | -.0324 | -.0278 | -.0231 | -.0185 | -.0139 | -.0093 | -.0046 | 0 | |
| Total Area | 0 | .0177 | .0252 | .0229 | .0105 | -.0118 | -.0443 | -.0866 | -.1390 | -.2014 | -.2737 | -.1163 | -.0122 | .1118 | .1825 | .2244 | .2373 | .2213 | .1764 | .1027 | 0 | |

TABLE A2.7



| Unit load at | REACTIONS/P | | | SHEARS/P | | | | |
|--------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|--------|
| | R _A | R _B | R _C | V _{AB} | V _{BA} | V _{BC} | V _{CB} | |
| SPAN 1 | A. | 1.0000 | 0 | 0 | 1.0000 | 0 | 0 | 0 |
| | .1 | .8817 | .1291 | -.0108 | .8817 | -.1183 | .0108 | .0108 |
| | .2 | .7644 | .2565 | -.0209 | .7644 | -.2356 | .0209 | .0209 |
| | .3 | .6494 | .3803 | -.0297 | .6494 | -.3506 | .0297 | .0297 |
| | .4 | .5378 | .4988 | -.0366 | .5378 | -.4622 | .0366 | .0366 |
| | .5 | .4306 | .6103 | -.0408 | .4306 | -.5694 | .0408 | .0408 |
| | .6 | .3289 | .7129 | -.0418 | .3289 | -.6711 | .0418 | .0418 |
| | .7 | .2339 | .8050 | -.0389 | .2339 | -.7661 | .0389 | .0389 |
| | .8 | .1467 | .8847 | -.0314 | .1467 | -.8533 | .0314 | .0314 |
| | .9 | .0683 | .9503 | -.0186 | .0683 | -.9317 | .0186 | .0186 |
| SPAN 2 | B. | 0 | 1.0000 | 0 | 0 | -1.0 0 | 0 1.0 | 0 |
| | .1 | -.0915 | 1.0454 | .0462 | -.0915 | -.0915 | .9538 | -.0462 |
| | .2 | -.1541 | 1.0448 | .1093 | -.1541 | -.1541 | .8907 | -.1093 |
| | .3 | -.1911 | 1.0035 | .1876 | -.1911 | -.1911 | .8124 | -.1876 |
| | .4 | -.2055 | .9264 | .2791 | -.2055 | -.2055 | .7209 | -.2791 |
| | .5 | -.2007 | .8187 | .3819 | -.2007 | -.2007 | .6181 | -.3819 |
| | .6 | -.1798 | .6856 | .4942 | -.1798 | -.1798 | .5058 | -.4942 |
| | .7 | -.1461 | .5320 | .6141 | -.1461 | -.1461 | .3859 | -.6141 |
| | .8 | -.1028 | .3632 | .7396 | -.1028 | -.1028 | .2604 | -.7396 |
| | .9 | -.0530 | .1841 | .8688 | -.0530 | -.0530 | .1312 | -.8688 |
| C. | 0 | 0 | 1.0000 | 0 | 0 | 0 | -1.0000 | |
| +Area | .4537 | 1.7848 | .7162 | .4537 | .0 | 1.0110 | .0272 | |
| -Area | -.2275 | 0 | -.0272 | -.2275 | -.7738 | 0 | -.7162 | |
| Total Area | .2263 | 1.7848 | .6890 | .2263 | -.7738 | 1.0110 | -.6890 | |

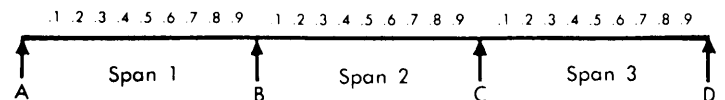
Influence coefficients — Two continuous spans.

L = Length of SHORTER spans; length of LONGER spans = NL.

N=1.7

| Unit load at | MOMENTS/PL | | | | | | | | | | | | | | | | | | | | | |
|--------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | SPAN 1 | | | | | | | | | | SPAN 2 | | | | | | | | | | | |
| | A | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | B | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | C | |
| SPAN 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0874 | .0747 | .0621 | .0494 | .0368 | .0242 | .0115 | -.0011 | -.0138 | -.0264 | -.0231 | -.0198 | -.0165 | -.0132 | -.0099 | -.0066 | -.0033 | .0000 | .0033 | .0066 |
| | .2 | 0 | .0749 | .1498 | .1246 | .0995 | .0744 | .0493 | .0242 | -.0010 | -.0261 | -.0512 | -.0448 | -.0384 | -.0320 | -.0256 | -.0192 | -.0128 | -.0064 | .0000 | .0064 | .0128 |
| | .3 | 0 | .0627 | .1254 | .1882 | .1509 | .1136 | .0763 | .0390 | .0018 | -.0355 | -.0728 | -.0637 | -.0546 | -.0455 | -.0364 | -.0273 | -.0182 | -.0091 | .0000 | .0091 | .0182 |
| | .4 | 0 | .0510 | .1021 | .1531 | .2042 | .1552 | .1062 | .0573 | .0083 | -.0406 | -.0896 | -.0784 | -.0672 | -.0560 | -.0448 | -.0336 | -.0224 | -.0112 | .0000 | .0112 | .0224 |
| | .5 | 0 | .0400 | .0800 | .1200 | .1600 | .2000 | .1400 | .0800 | .0200 | -.0400 | -.1000 | -.0875 | -.0750 | -.0625 | -.0500 | -.0375 | -.0250 | -.0125 | .0000 | .0125 | .0250 |
| | .6 | 0 | .0298 | .0595 | .0893 | .1190 | .1488 | .1786 | .1084 | .0381 | -.0322 | -.1024 | -.0896 | -.0768 | -.0640 | -.0512 | -.0384 | -.0256 | -.0128 | .0000 | .0128 | .0256 |
| | .7 | 0 | .0205 | .0410 | .0614 | .0819 | .1024 | .1229 | .1434 | .0638 | -.0157 | -.0952 | -.0833 | -.0714 | -.0595 | -.0476 | -.0357 | -.0238 | -.0119 | .0000 | .0119 | .0238 |
| | .8 | 0 | .0123 | .0246 | .0370 | .0493 | .0616 | .0739 | .0862 | .0986 | .0109 | -.0768 | -.0672 | -.0576 | -.0480 | -.0384 | -.0288 | -.0192 | -.0096 | .0000 | .0096 | .0192 |
| .9 | 0 | .0029 | .0058 | .0088 | .0218 | .0272 | .0326 | .0381 | .0435 | .0490 | -.0456 | -.0399 | -.0342 | -.0285 | -.0228 | -.0171 | -.0114 | -.0057 | .0000 | .0057 | .0114 | |
| SPAN 2 | B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | -.0039 | -.0078 | -.0117 | -.0156 | -.0195 | -.0234 | -.0273 | -.0312 | -.0351 | -.0390 | -.0534 | -.0458 | -.0382 | -.0306 | -.0230 | -.0154 | -.0073 | .0002 | -.0074 | -.0150 |
| | .2 | 0 | -.0064 | -.0128 | -.0192 | -.0256 | -.0320 | -.0384 | -.0448 | -.0512 | -.0576 | -.0640 | -.0192 | -.1024 | -.0856 | -.0688 | -.0520 | -.0352 | -.0184 | .0016 | -.0152 | -.0320 |
| | .3 | 0 | -.0077 | -.0154 | -.0231 | -.0308 | -.0385 | -.0462 | -.0539 | -.0616 | -.0693 | -.0770 | -.0042 | -.0686 | -.1414 | -.1142 | -.0870 | -.0598 | -.0326 | .0054 | -.0218 | -.0490 |
| | .4 | 0 | -.0080 | -.0160 | -.0240 | -.0320 | -.0400 | -.0480 | -.0560 | -.0640 | -.0720 | -.0800 | -.0184 | -.0432 | -.1048 | -.1664 | -.1280 | -.0896 | -.0512 | .0128 | -.0256 | -.0640 |
| | .5 | 0 | -.0075 | -.0150 | -.0225 | -.0300 | -.0375 | -.0450 | -.0525 | -.0600 | -.0675 | -.0750 | -.0250 | -.0250 | -.0750 | -.1250 | -.1750 | -.1250 | -.0750 | .0250 | -.0250 | -.0750 |
| | .6 | 0 | -.0064 | -.0128 | -.0192 | -.0256 | -.0320 | -.0384 | -.0448 | -.0512 | -.0576 | -.0640 | -.0256 | -.0128 | -.0512 | -.0896 | -.1280 | -.1664 | -.1048 | .0432 | -.0184 | -.0800 |
| | .7 | 0 | -.0049 | -.0098 | -.0147 | -.0196 | -.0245 | -.0294 | -.0343 | -.0392 | -.0441 | -.0490 | -.0218 | .0054 | -.0326 | -.0598 | -.0870 | -.1142 | -.1414 | .0686 | -.0042 | -.0770 |
| | .8 | 0 | -.0032 | -.0064 | -.0096 | -.0128 | -.0160 | -.0192 | -.0224 | -.0256 | -.0288 | -.0320 | -.0152 | .0016 | -.0184 | -.0352 | -.0520 | -.0688 | -.0856 | .1024 | .0192 | -.0640 |
| .9 | 0 | -.0015 | -.0030 | -.0045 | -.0060 | -.0075 | -.0090 | -.0105 | -.0120 | -.0135 | -.0150 | -.0074 | .0002 | -.0078 | -.0154 | -.0230 | -.0306 | -.0382 | .0458 | .0534 | -.0390 | |
| SPAN 3 | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0011 | .0023 | .0034 | .0046 | .0057 | .0068 | .0080 | .0091 | .0103 | .0114 | .0057 | .0000 | -.0057 | -.0114 | -.0171 | -.0228 | -.0285 | -.0342 | -.0399 | -.0456 |
| | .2 | 0 | .0019 | .0038 | .0058 | .0077 | .0096 | .0115 | .0134 | .0154 | .0173 | .0192 | .0096 | .0000 | -.0096 | -.0192 | -.0288 | -.0384 | -.0480 | -.0576 | -.0672 | -.0768 |
| | .3 | 0 | .0024 | .0048 | .0071 | .0095 | .0119 | .0143 | .0167 | .0190 | .0214 | .0238 | .0119 | .0000 | -.0119 | -.0238 | -.0357 | -.0476 | -.0595 | -.0714 | -.0833 | -.0952 |
| | .4 | 0 | .0026 | .0051 | .0077 | .0102 | .0128 | .0154 | .0179 | .0205 | .0230 | .0256 | .0128 | .0000 | -.0128 | -.0256 | -.0384 | -.0512 | -.0640 | -.0768 | -.0896 | -.1024 |
| | .5 | 0 | .0025 | .0050 | .0075 | .0100 | .0125 | .0150 | .0175 | .0200 | .0225 | .0250 | .0125 | .0000 | -.0125 | -.0250 | -.0375 | -.0500 | -.0625 | -.0750 | -.0875 | -.1000 |
| | .6 | 0 | .0022 | .0045 | .0067 | .0090 | .0112 | .0134 | .0157 | .0179 | .0202 | .0224 | .0112 | .0000 | -.0112 | -.0224 | -.0336 | -.0448 | -.0560 | -.0672 | -.0784 | -.0896 |
| | .7 | 0 | .0018 | .0036 | .0055 | .0073 | .0091 | .0109 | .0127 | .0146 | .0164 | .0182 | .0091 | .0000 | -.0091 | -.0182 | -.0273 | -.0364 | -.0455 | -.0546 | -.0637 | -.0728 |
| | .8 | 0 | .0013 | .0026 | .0038 | .0051 | .0064 | .0077 | .0090 | .0102 | .0115 | .0128 | .0064 | .0000 | -.0064 | -.0128 | -.0192 | -.0256 | -.0320 | -.0384 | -.0448 | -.0512 |
| .9 | 0 | .0007 | .0013 | .0020 | .0026 | .0033 | .0040 | .0046 | .0053 | .0059 | .0066 | .0033 | .0000 | -.0033 | -.0066 | -.0099 | -.0132 | -.0165 | -.0198 | -.0231 | -.0264 | |
| D | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| + Area | 0 | .0400 | .0700 | .0900 | .1000 | .1000 | .0900 | .0700 | .0402 | .0204 | .0167 | .0152 | .0300 | .0550 | .0700 | .0750 | .0700 | .0550 | .0300 | .0152 | .0167 | |
| - Area | 0 | -.0050 | -.0100 | -.0150 | -.0200 | -.0250 | -.0300 | -.0350 | -.0402 | -.0654 | -.1167 | -.0702 | -.0500 | -.0500 | -.0500 | -.0500 | -.0500 | -.0500 | -.0500 | -.0702 | -.1167 | |
| Total Area | 0 | .0350 | .0600 | .0750 | .0800 | .0750 | .0600 | .0350 | .0000 | -.0450 | -.1000 | -.0550 | -.0200 | .0050 | .0200 | .0250 | .0200 | .0050 | -.0200 | -.0550 | -.1000 | |

TABLE A3.0



| Unit load at | REACTIONS/P | | | | SHEARS/P | | | | | | |
|--------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------|
| | R _A | R _B | R _C | R _D | V _{AB} | V _{BA} | V _{BC} | V _{CB} | V _{CD} | V _{DC} | |
| SPAN 1 | A | 1.0 | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 |
| | .1 | .8736 | .1594 | -.0396 | .0066 | .8736 | -.1264 | .0330 | .0330 | -.0066 | -.0066 |
| | .2 | .7488 | .3152 | -.0768 | .0128 | .7488 | -.2512 | .0640 | .0640 | -.0128 | -.0128 |
| | .3 | .6272 | .4638 | -.1092 | .0182 | .6272 | -.3728 | .0910 | .0910 | -.0182 | -.0182 |
| | .4 | .5104 | .6016 | -.1344 | .0224 | .5104 | -.4896 | .1120 | .1120 | -.0224 | -.0224 |
| | .5 | .4000 | .7250 | -.1500 | .0250 | .4000 | -.6000 | .1250 | .1250 | -.0250 | -.0250 |
| | .6 | .2976 | .8304 | -.1536 | .0256 | .2976 | -.7024 | .1280 | .1280 | -.0256 | -.0256 |
| | .7 | .2048 | .9142 | -.1428 | .0238 | .2048 | -.7952 | .1190 | .1190 | -.0238 | -.0238 |
| | .8 | .1232 | .9728 | -.1152 | .0192 | .1232 | -.8768 | .0960 | .0960 | -.0192 | -.0192 |
| | .9 | .0544 | 1.0026 | -.0684 | .0114 | .0544 | -.9456 | .0570 | .0570 | -.0114 | -.0114 |
| SPAN 2 | B | 0 | 1.0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 0 | 0 |
| | .1 | -.0390 | .9630 | .0910 | -.0150 | -.0390 | -.0390 | .9240 | -.0760 | .0150 | .0150 |
| | .2 | -.0640 | .8960 | .2000 | -.0320 | -.0640 | -.0640 | .8320 | -.1680 | .0320 | .0320 |
| | .3 | -.0770 | .8050 | .3210 | -.0490 | -.0770 | -.0770 | .7280 | -.2720 | .0490 | .0490 |
| | .4 | -.0800 | .6960 | .4480 | -.0640 | -.0800 | -.0800 | .6160 | -.3840 | .0640 | .0640 |
| | .5 | -.0750 | .5750 | .5750 | -.0750 | -.0750 | -.0750 | .5000 | -.5000 | .0750 | .0750 |
| | .6 | -.0640 | .4480 | .6960 | -.0800 | -.0640 | -.0640 | .3840 | -.6160 | .0800 | .0800 |
| | .7 | -.0490 | .3210 | .8050 | -.0770 | -.0490 | -.0490 | .2720 | -.7280 | .0770 | .0770 |
| | .8 | -.0320 | .2000 | .8960 | -.0640 | -.0320 | -.0320 | .1680 | -.8320 | .0640 | .0640 |
| | .9 | -.0150 | .0910 | .9630 | -.0390 | -.0150 | -.0150 | .0760 | -.9240 | .0390 | .0390 |
| SPAN 3 | C | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | -1.0 | 0 | 0 |
| | .1 | .0114 | -.0684 | 1.0026 | .0544 | .0114 | .0114 | -.0570 | -.0570 | .9456 | -.0544 |
| | .2 | .0192 | -.1152 | .9728 | .1232 | .0192 | .0192 | -.0960 | -.0960 | .8763 | -.1232 |
| | .3 | .0238 | -.1428 | .9142 | .2048 | .0238 | .0238 | -.1190 | -.1190 | .7952 | -.2048 |
| | .4 | .0256 | -.1536 | .8304 | .2976 | .0256 | .0256 | -.1280 | -.1280 | .7024 | -.2976 |
| | .5 | .0250 | -.1500 | .7250 | .4000 | .0250 | .0250 | -.1250 | -.1250 | .6000 | -.4000 |
| | .6 | .0224 | -.1344 | .6016 | .5104 | .0224 | .0224 | -.1120 | -.1120 | .4896 | -.5104 |
| | .7 | .0182 | -.1092 | .4638 | .6272 | .0182 | .0182 | -.0910 | -.0910 | .3728 | -.6272 |
| | .8 | .0128 | -.0768 | .3152 | .7488 | .0128 | .0128 | -.0640 | -.0640 | .2512 | -.7488 |
| | .9 | .0066 | -.0396 | .1594 | .8736 | .0066 | .0066 | -.0330 | -.0330 | .1264 | -.8736 |
| D | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | -1.0 | |
| + Area | | .4500 | 1.2000 | 1.2000 | .4500 | .4500 | .0167 | .5833 | .0833 | .6167 | .0500 |
| - Area | | -.0500 | -.1000 | -.1000 | -.0500 | -.0500 | -.6167 | -.0833 | -.5833 | -.0167 | -.4500 |
| Total Area | | .4000 | 1.1000 | 1.1000 | .4000 | .4000 | -.6000 | .5000 | -.5000 | .6000 | -.4000 |

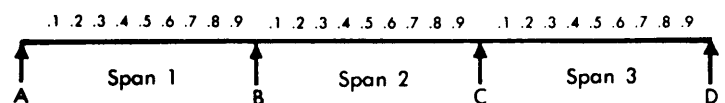
Influence coefficients — Three continuous spans.

L = Length of EXTERIOR spans; length of interior spans = NL.

N=1.0

| Unit load at | MOMENTS/PL | | | | | | | | | | | | | | | | | | | | | |
|--------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | SPAN 1 | | | | | | | | | | | SPAN 2 | | | | | | | | | | |
| | A | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | B | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | C | |
| SPAN 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0875 | .0749 | .0624 | .0499 | .0373 | .0248 | .0123 | -.0002 | -.0128 | -.0253 | -.0221 | -.0189 | -.0157 | -.0125 | -.0093 | -.0061 | -.0030 | .0002 | .0034 | .0066 |
| | .2 | 0 | .0751 | .1502 | .1253 | .1004 | .0755 | .0506 | .0256 | .0007 | -.0242 | -.0491 | -.0429 | -.0367 | -.0305 | -.0243 | -.0181 | -.0119 | -.0057 | .0005 | .0067 | .0129 |
| | .3 | 0 | .0630 | .1260 | .1891 | .1521 | .1151 | .0781 | .0411 | .0042 | -.0328 | -.0698 | -.0610 | -.0522 | -.0434 | -.0346 | -.0258 | -.0169 | -.0081 | .0007 | .0095 | .0183 |
| | .4 | 0 | .0514 | .1028 | .1542 | .2056 | .1571 | .1085 | .0599 | .0113 | -.0373 | -.0859 | -.0751 | -.0642 | -.0534 | -.0425 | -.0317 | -.0209 | -.0100 | .0068 | .0117 | .0225 |
| | .5 | 0 | .0404 | .0808 | .1212 | .1617 | .2021 | .1425 | .0829 | .0233 | -.0363 | -.0959 | -.0838 | -.0717 | -.0596 | -.0475 | -.0354 | -.0233 | -.0112 | .0009 | .0130 | .0251 |
| | .6 | 0 | .0302 | .0604 | .0906 | .1207 | .1509 | .1811 | .1113 | .0415 | -.0283 | -.0982 | -.0858 | -.0734 | -.0610 | -.0486 | -.0362 | -.0238 | -.0115 | .0009 | .0133 | .0257 |
| | .7 | 0 | .0209 | .0417 | .0626 | .0835 | .1044 | .1252 | .1461 | .0670 | -.0121 | -.0913 | -.0797 | -.0682 | -.0567 | -.0452 | -.0337 | -.0222 | -.0106 | .0009 | .0124 | .0239 |
| | .8 | 0 | .0126 | .0253 | .0379 | .0506 | .0632 | .0758 | .0885 | .1011 | .0137 | -.0736 | -.0643 | -.0550 | -.0458 | -.0365 | -.0272 | -.0179 | -.0086 | .0007 | .0100 | .0193 |
| | .9 | 0 | .0056 | .0113 | .0169 | .0225 | .0281 | .0338 | .0394 | .0450 | .0507 | -.0437 | -.0382 | -.0327 | -.0272 | -.0216 | -.0161 | -.0106 | -.0051 | .0004 | .0059 | .0114 |
| SPAN 2 | B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | -.0045 | -.0090 | -.0135 | -.0179 | -.0224 | -.0269 | -.0314 | -.0359 | -.0404 | -.0449 | .0569 | .0487 | .0406 | .0324 | .0242 | .0160 | .0078 | -.0004 | -.0086 | -.0168 |
| | .2 | 0 | -.0074 | -.0147 | -.0221 | -.0294 | -.0368 | -.0441 | -.0515 | -.0588 | -.0662 | -.0735 | .0182 | .1100 | .0917 | .0735 | .0552 | .0370 | .0187 | .0004 | -.0178 | -.0361 |
| | .3 | 0 | -.0088 | -.0177 | -.0265 | -.0353 | -.0442 | -.0530 | -.0618 | -.0706 | -.0795 | -.0883 | -.0080 | .0722 | .1525 | .1228 | .0931 | .0634 | .0336 | .0039 | -.0258 | -.0555 |
| | .4 | 0 | -.0092 | -.0183 | -.0275 | -.0366 | -.0458 | -.0549 | -.0641 | -.0732 | -.0824 | -.0916 | -.0237 | .0442 | .1121 | .1799 | .1378 | .0957 | .0536 | .0114 | -.0307 | -.0728 |
| | .5 | 0 | -.0086 | -.0171 | -.0257 | -.0342 | -.0428 | -.0514 | -.0599 | -.0685 | -.0771 | -.0856 | -.0306 | .0244 | .0794 | .1344 | .1894 | .1344 | .0794 | .0244 | -.0306 | -.0856 |
| | .6 | 0 | -.0073 | -.0146 | -.0218 | -.0291 | -.0364 | -.0437 | -.0510 | -.0583 | -.0655 | -.0728 | -.0307 | .0114 | .0536 | .0957 | .1378 | .1799 | .1121 | .0442 | -.0237 | -.0916 |
| | .7 | 0 | -.0055 | -.0111 | -.0167 | -.0222 | -.0278 | -.0333 | -.0389 | -.0444 | -.0500 | -.0555 | -.0258 | .0039 | .0336 | .0634 | .0931 | .1228 | .1525 | .0722 | -.0080 | -.0883 |
| | .8 | 0 | -.0036 | -.0072 | -.0108 | -.0144 | -.0180 | -.0216 | -.0252 | -.0288 | -.0325 | -.0361 | -.0178 | .0004 | .0187 | .0370 | .0552 | .0735 | .0917 | .1100 | .0182 | -.0735 |
| | .9 | 0 | -.0017 | -.0034 | -.0050 | -.0067 | -.0084 | -.0101 | -.0117 | -.0134 | -.0151 | -.0168 | -.0086 | -.0004 | .0078 | .0160 | .0242 | .0324 | .0406 | .0487 | .0569 | -.0449 |
| SPAN 3 | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0011 | .0023 | .0034 | .0046 | .0057 | .0068 | .0080 | .0091 | .0103 | .0114 | .0059 | .0004 | -.0051 | -.0106 | -.0161 | -.0216 | -.0272 | -.0327 | -.0382 | -.0437 |
| | .2 | 0 | .0019 | .0039 | .0058 | .0077 | .0097 | .0116 | .0135 | .0154 | .0174 | .0193 | .0100 | .0007 | -.0086 | -.0179 | -.0272 | -.0365 | -.0458 | -.0550 | -.0643 | -.0736 |
| | .3 | 0 | .0024 | .0048 | .0072 | .0096 | .0120 | .0143 | .0167 | .0191 | .0215 | .0239 | .0124 | .0009 | -.0106 | -.0222 | -.0337 | -.0452 | -.0567 | -.0682 | -.0797 | -.0913 |
| | .4 | 0 | .0026 | .0051 | .0077 | .0103 | .0129 | .0154 | .0180 | .0206 | .0231 | .0257 | .0133 | .0009 | -.0115 | -.0238 | -.0362 | -.0486 | -.0610 | -.0734 | -.0858 | -.0982 |
| | .5 | 0 | .0025 | .0050 | .0075 | .0100 | .0126 | .0151 | .0176 | .0201 | .0226 | .0251 | .0130 | .0009 | -.0112 | -.0233 | -.0354 | -.0475 | -.0596 | -.0717 | -.0838 | -.0959 |
| | .6 | 0 | .0023 | .0045 | .0068 | .0090 | .0113 | .0135 | .0158 | .0180 | .0203 | .0225 | .0117 | .0008 | -.0100 | -.0209 | -.0317 | -.0425 | -.0534 | -.0642 | -.0751 | -.0859 |
| | .7 | 0 | .0018 | .0037 | .0055 | .0073 | .0092 | .0110 | .0128 | .0146 | .0165 | .0183 | .0095 | .0007 | -.0081 | -.0169 | -.0258 | -.0346 | -.0434 | -.0522 | -.0610 | -.0698 |
| | .8 | 0 | .0013 | .0026 | .0039 | .0052 | .0065 | .0077 | .0090 | .0103 | .0116 | .0129 | .0067 | .0005 | -.0057 | -.0119 | -.0181 | -.0243 | -.0305 | -.0367 | -.0429 | -.0491 |
| | .9 | 0 | .0007 | .0013 | .0020 | .0026 | .0033 | .0040 | .0046 | .0053 | .0059 | .0066 | .0034 | .0002 | -.0030 | -.0061 | -.0093 | -.0125 | -.0157 | -.0189 | -.0221 | -.0253 |
| + Area | 0 | .0403 | .0705 | .0908 | .1011 | .1015 | .0917 | .0720 | .0423 | .0209 | .0167 | .0163 | .0346 | .0643 | .0824 | .0885 | .0824 | .0643 | .0346 | .0163 | .0167 | |
| - Area | 0 | -.0063 | -.0125 | -.0188 | -.0251 | -.0315 | -.0377 | -.0440 | -.0503 | -.0566 | -.0629 | -.1267 | -.0718 | -.0478 | -.0472 | -.0472 | -.0472 | -.0472 | -.0478 | -.0718 | -.1267 | |
| Total Area | 0 | .0340 | .0580 | .0720 | .0760 | .0700 | .0540 | .0280 | -.0080 | -.0540 | -.1100 | -.0555 | -.0132 | .0171 | .0352 | .0413 | .0352 | .0171 | -.0132 | -.0555 | -.1100 | |

TABLE A3.1



| Unit load of | REACTIONS/P | | | | SHEARS/P | | | | | | |
|--------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------|
| | R _A | R _B | R _C | R _D | V _{AB} | V _{BA} | V _{BC} | V _{CB} | V _{CD} | V _{DC} | |
| SPAN 1 | A | 1.0 | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 |
| | .1 | .8747 | .1543 | -.0356 | .0066 | .8747 | -.1253 | .0290 | .0290 | -.0066 | -.0066 |
| | .2 | .7509 | .3054 | -.0692 | .0129 | .7509 | -.2491 | .0563 | .0563 | -.0129 | -.0129 |
| | .3 | .6302 | .4498 | -.0983 | .0183 | .6302 | -.3698 | .0800 | .0800 | -.0183 | -.0183 |
| | .4 | .5141 | .5844 | -.1210 | .0225 | .5141 | -.4859 | .0985 | .0985 | -.0225 | -.0225 |
| | .5 | .4041 | .7058 | -.1350 | .0251 | .4041 | -.5959 | .1099 | .1099 | -.0251 | -.0251 |
| | .6 | .3018 | .8108 | -.1383 | .0257 | .3018 | -.6982 | .1126 | .1126 | -.0257 | -.0257 |
| | .7 | .2087 | .8960 | -.1286 | .0239 | .2087 | -.7913 | .1047 | .1047 | -.0239 | -.0239 |
| | .8 | .1264 | .9581 | -.1038 | .0193 | .1264 | -.8736 | .0845 | .0845 | -.0193 | -.0193 |
| .9 | .0563 | .9939 | -.0616 | .0114 | .0563 | -.9437 | .0502 | .0502 | -.0114 | -.0114 | |
| SPAN 2 | B | 0 | 1.0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 0 | 0 |
| | .1 | -.0449 | .9704 | .0913 | -.0168 | -.0449 | -.0449 | .9255 | -.0745 | .0168 | .0168 |
| | .2 | -.0735 | .9076 | .2020 | -.0361 | -.0735 | -.0735 | .8341 | -.1659 | .0361 | .0361 |
| | .3 | -.0833 | .8181 | .3257 | -.0555 | -.0883 | -.0883 | .7298 | -.2702 | .0555 | .0555 |
| | .4 | -.0916 | .7086 | .4558 | -.0728 | -.0916 | -.0916 | .6170 | -.3830 | .0728 | .0728 |
| | .5 | -.0856 | .5856 | .5856 | -.0856 | -.0856 | -.0856 | .5000 | -.5000 | .0856 | .0856 |
| | .6 | -.0728 | .4558 | .7086 | -.0916 | -.0728 | -.0728 | .3830 | -.6170 | .0916 | .0916 |
| | .7 | -.0555 | .3257 | .8181 | -.0883 | -.0555 | -.0555 | .2702 | -.7298 | .0883 | .0883 |
| | .8 | -.0361 | .2020 | .9076 | -.0735 | -.0361 | -.0361 | .1659 | -.8341 | .0735 | .0735 |
| | .9 | -.0168 | .0913 | .9704 | -.0449 | -.0168 | -.0168 | .0745 | -.9255 | .0449 | .0449 |
| SPAN 3 | C | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | -1.0 | 0 | 0 |
| | .1 | .0114 | -.0616 | .9939 | .0563 | .0114 | .0114 | -.0502 | -.0502 | .9437 | -.0563 |
| | .2 | .0193 | -.1038 | .9581 | .1264 | .0193 | .0193 | -.0845 | -.0845 | .8736 | -.1264 |
| | .3 | .0239 | -.1286 | .8960 | .2087 | .0239 | .0239 | -.1047 | -.1047 | .7913 | -.2087 |
| | .4 | .0257 | -.1383 | .8108 | .3018 | .0257 | .0257 | -.1126 | -.1126 | .6982 | -.3018 |
| | .5 | .0251 | -.1350 | .7058 | .4041 | .0251 | .0251 | -.1099 | -.1099 | .5959 | -.4041 |
| | .6 | .0225 | -.1210 | .5844 | .5141 | .0225 | .0225 | -.0985 | -.0985 | .4859 | -.5141 |
| | .7 | .0183 | -.0983 | .4498 | .6302 | .0183 | .0183 | -.0800 | -.0800 | .3698 | -.6302 |
| | .8 | .0129 | -.0692 | .3054 | .7509 | .0129 | .0129 | -.0563 | -.0563 | .2491 | -.7509 |
| | .9 | .0066 | -.0356 | .1543 | .8747 | .0066 | .0066 | -.0290 | -.0290 | .1253 | -.8747 |
| D | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| + Area | .4528 | 1.2500 | 1.2500 | .4528 | .4528 | .0167 | .6233 | .0733 | .6267 | .0628 | |
| - Area | -.0628 | -.0900 | -.0900 | -.0628 | -.0628 | -.6267 | -.0733 | -.6233 | -.0167 | -.4528 | |
| Total Area | .3900 | 1.1600 | 1.1600 | .3900 | .3900 | -.6100 | .5500 | -.5500 | .6100 | -.3900 | |

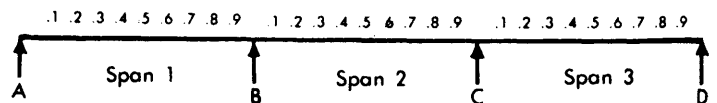
Influence coefficients — Three continuous spans.

L = Length of EXTERIOR spans; length of interior spans = NL.

N=1.1

| Unit load at | MOMENTS/PL | | | | | | | | | | | | | | | | | | | | | |
|--------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | SPAN 1 | | | | | | | | | | SPAN 2 | | | | | | | | | | | |
| | A | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | B | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | C | |
| SPAN 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0876 | .0781 | .0627 | .0503 | .0378 | .0254 | .0130 | .0006 | -.0119 | -.0243 | -.0212 | -.0181 | -.0150 | -.0119 | -.0088 | -.0057 | -.0027 | .0004 | .0035 | .0066 |
| | .2 | 0 | .0753 | .1506 | .1258 | .1011 | .0764 | .0517 | .0270 | .0023 | -.0224 | -.0471 | -.0411 | -.0351 | -.0291 | -.0231 | -.0171 | -.0111 | -.0051 | .0009 | .0069 | .0129 |
| | .3 | 0 | .0633 | .1266 | .1899 | .1532 | .1165 | .0798 | .0431 | .0064 | -.0303 | -.0670 | -.0585 | -.0500 | -.0414 | -.0329 | -.0244 | -.0158 | -.0073 | .0012 | .0098 | .0183 |
| | .4 | 0 | .0518 | .1035 | .1553 | .2070 | .1588 | .1105 | .0623 | .0140 | -.0343 | -.0825 | -.0720 | -.0615 | -.0510 | -.0405 | -.0300 | -.0195 | -.0090 | .0015 | .0120 | .0225 |
| | .5 | 0 | .0408 | .0816 | .1224 | .1632 | .2040 | .1448 | .0855 | .0263 | -.0329 | -.0921 | -.0804 | -.0686 | -.0569 | -.0452 | -.0335 | -.0218 | -.0100 | .0017 | .0134 | .0251 |
| | .6 | 0 | .0306 | .0611 | .0917 | .1223 | .1529 | .1834 | .1140 | .0446 | -.0249 | -.0943 | -.0823 | -.0703 | -.0583 | -.0463 | -.0343 | -.0223 | -.0103 | .0017 | .0137 | .0257 |
| | .7 | 0 | .0212 | .0425 | .0637 | .0849 | .1062 | .1274 | .1486 | .0699 | -.0089 | -.0877 | -.0765 | -.0653 | -.0542 | -.0430 | -.0319 | -.0207 | -.0096 | .0016 | .0128 | .0239 |
| | .8 | 0 | .0129 | .0259 | .0388 | .0517 | .0646 | .0776 | .0905 | .1034 | .0184 | -.0707 | -.0617 | -.0527 | -.0437 | -.0347 | -.0257 | -.0167 | -.0077 | .0013 | .0103 | .0193 |
| .9 | 0 | .0058 | .0116 | .0174 | .0232 | .0290 | .0348 | .0406 | .0464 | .0522 | -.0420 | -.0366 | -.0313 | -.0260 | -.0206 | -.0153 | -.0099 | -.0046 | .0008 | .0061 | .0115 | |
| SPAN 2 | B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | -.0051 | -.0102 | -.0153 | -.0204 | -.0255 | -.0305 | -.0356 | -.0407 | -.0458 | -.0509 | .0603 | .0516 | .0428 | .0340 | .0253 | .0165 | .0078 | -.0010 | -.0098 | -.0185 |
| | .2 | 0 | -.0083 | -.0167 | -.0250 | -.0333 | -.0417 | -.0500 | -.0583 | -.0667 | -.0750 | -.0833 | .0170 | .1173 | .0976 | .0780 | .0583 | .0386 | .0189 | -.0008 | .0204 | -.0401 |
| | .3 | 0 | -.0100 | -.0200 | -.0300 | -.0400 | -.0500 | -.0599 | -.0699 | -.0799 | -.0899 | -.0999 | -.0121 | .0757 | .1634 | .1312 | .0990 | .0668 | .0346 | .0023 | .0299 | -.0621 |
| | .4 | 0 | -.0103 | -.0207 | -.0310 | -.0413 | -.0517 | -.0620 | -.0724 | -.0827 | -.0930 | -.1034 | -.0292 | .0449 | .1191 | .1933 | .1474 | .1016 | .0557 | .0099 | .0359 | -.0818 |
| | .5 | 0 | -.0096 | -.0193 | -.0289 | -.0386 | -.0482 | -.0579 | -.0675 | -.0771 | -.0868 | -.0964 | -.0364 | .0236 | .0836 | .1436 | .2036 | .1436 | .0836 | .0236 | .0364 | -.0964 |
| | .6 | 0 | -.0082 | -.0164 | -.0245 | -.0327 | -.0409 | -.0491 | -.0572 | -.0654 | -.0736 | -.0818 | -.0359 | .0099 | .0557 | .1016 | .1474 | .1933 | .1191 | .0449 | .0292 | -.1034 |
| | .7 | 0 | -.0062 | -.0124 | -.0186 | -.0248 | -.0311 | -.0373 | -.0435 | -.0497 | -.0559 | -.0621 | -.0299 | .0023 | .0346 | .0668 | .0990 | .1312 | .1634 | .0757 | .0121 | -.0999 |
| | .8 | 0 | -.0040 | -.0080 | -.0120 | -.0160 | -.0201 | -.0241 | -.0281 | -.0321 | -.0361 | -.0401 | -.0204 | -.0008 | .0189 | .0386 | .0583 | .0780 | .0976 | .1173 | .0170 | -.0833 |
| .9 | 0 | -.0019 | -.0037 | -.0056 | -.0074 | -.0093 | -.0111 | -.0130 | -.0148 | -.0167 | -.0185 | -.0098 | -.0010 | .0078 | .0165 | .0253 | .0340 | .0428 | .0516 | .0603 | -.0509 | |
| SPAN 3 | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0012 | .0023 | .0035 | .0046 | .0058 | .0069 | .0081 | .0092 | .0104 | .0115 | .0061 | .0008 | -.0046 | -.0099 | -.0153 | -.0206 | -.0260 | -.0313 | -.0366 | -.0420 |
| | .2 | 0 | .0019 | .0039 | .0058 | .0077 | .0097 | .0116 | .0135 | .0154 | .0174 | .0193 | .0103 | .0013 | -.0077 | -.0167 | -.0257 | -.0347 | -.0437 | -.0527 | -.0617 | -.0707 |
| | .3 | 0 | .0024 | .0048 | .0072 | .0096 | .0120 | .0143 | .0167 | .0191 | .0215 | .0239 | .0128 | .0016 | -.0096 | -.0207 | -.0319 | -.0430 | -.0542 | -.0653 | -.0765 | -.0877 |
| | .4 | 0 | .0026 | .0051 | .0077 | .0103 | .0129 | .0154 | .0180 | .0206 | .0231 | .0257 | .0137 | .0017 | -.0103 | -.0223 | -.0343 | -.0463 | -.0583 | -.0703 | -.0823 | -.0943 |
| | .5 | 0 | .0025 | .0050 | .0075 | .0100 | .0126 | .0151 | .0176 | .0201 | .0226 | .0251 | .0134 | .0017 | -.0100 | -.0218 | -.0335 | -.0452 | -.0569 | -.0686 | -.0804 | -.0921 |
| | .6 | 0 | .0023 | .0045 | .0068 | .0090 | .0113 | .0135 | .0158 | .0180 | .0203 | .0225 | .0120 | .0015 | -.0090 | -.0195 | -.0300 | -.0405 | -.0510 | -.0615 | -.0720 | -.0825 |
| | .7 | 0 | .0018 | .0037 | .0055 | .0073 | .0092 | .0110 | .0128 | .0146 | .0165 | .0183 | .0098 | .0012 | -.0073 | -.0158 | -.0244 | -.0329 | -.0414 | -.0500 | -.0585 | -.0670 |
| | .8 | 0 | .0013 | .0026 | .0039 | .0052 | .0065 | .0077 | .0090 | .0103 | .0116 | .0129 | .0069 | .0009 | -.0051 | -.0111 | -.0171 | -.0231 | -.0291 | -.0351 | -.0411 | -.0471 |
| .9 | 0 | .0007 | .0013 | .0020 | .0026 | .0033 | .0040 | .0046 | .0053 | .0059 | .0066 | .0035 | .0004 | -.0027 | -.0057 | -.0088 | -.0119 | -.0150 | -.0181 | -.0212 | -.0243 | |
| D | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| + Area | 0 | .0406 | .0710 | .0916 | .1022 | .1027 | .0932 | .0737 | .0443 | .0214 | .0167 | .0174 | .0394 | .0740 | .0956 | .1028 | .0956 | .0740 | .0394 | .0174 | .0167 | |
| - Area | 0 | -.0078 | -.0154 | -.0231 | -.0309 | -.0386 | -.0463 | -.0539 | -.0617 | -.0694 | -.0771 | -.1385 | -.0744 | -.0460 | -.0446 | -.0446 | -.0446 | -.0446 | -.0446 | -.0446 | -.1385 | |
| Total Area | 0 | .0328 | .0556 | .0685 | .0713 | .0641 | .0469 | .0198 | -.0174 | -.0646 | -.1218 | -.0570 | -.0066 | .0294 | .0510 | .0582 | .0510 | .0294 | -.0066 | -.0570 | -.1218 | |

TABLE A3.2



| Unit load at | REACTIONS/P | | | | SHEARS/P | | | | | | |
|--------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------|
| | R _A | R _B | R _C | R _D | V _{AB} | V _{BA} | V _{BC} | V _{CB} | V _{CD} | V _{DC} | |
| SPAN 1 | A | 1.0 | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 |
| | .1 | .8757 | .1501 | -.0324 | .0066 | .8757 | -.1243 | .0258 | .0258 | -.0066 | -.0066 |
| | .2 | .7529 | .2971 | -.0629 | .0129 | .7529 | -.2471 | .0500 | .0500 | -.0129 | -.0129 |
| | .3 | .6330 | .4381 | -.0894 | .0183 | .6330 | -.3670 | .0711 | .0711 | -.0183 | -.0183 |
| | .4 | .5175 | .5700 | -.1100 | .0225 | .5175 | -.4825 | .0875 | .0875 | -.0225 | -.0225 |
| | .5 | .4079 | .6897 | -.1227 | .0251 | .4079 | -.5921 | .0976 | .0976 | -.0251 | -.0251 |
| | .6 | .3057 | .7943 | -.1257 | .0257 | .3057 | -.6943 | .1000 | .1000 | -.0257 | -.0257 |
| | .7 | .2123 | .8806 | -.1168 | .0239 | .2123 | -.7877 | .0929 | .0929 | -.0239 | -.0239 |
| | .8 | .1293 | .9457 | -.0943 | .0193 | .1293 | -.8707 | .0750 | .0750 | -.0193 | -.0193 |
| .9 | .0580 | .9865 | -.0560 | .0115 | .0580 | -.9420 | .0445 | .0445 | -.0115 | -.0115 | |
| SPAN 2 | B | 0 | 1.0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 0 | 0 |
| | .1 | -.0509 | .9779 | .0915 | -.0185 | -.0509 | -.0509 | .9270 | -.0730 | .0185 | .0185 |
| | .2 | -.0833 | .9193 | .2041 | -.0401 | -.0833 | -.0833 | .8360 | -.1640 | .0401 | .0401 |
| | .3 | -.0999 | .8314 | .3306 | -.0621 | -.0999 | -.0999 | .7315 | -.2685 | .0621 | .0621 |
| | .4 | -.1034 | .7214 | .4638 | -.0818 | -.1034 | -.1034 | .6180 | -.3820 | .0818 | .0818 |
| | .5 | -.0964 | .5964 | .5964 | -.0964 | -.0964 | -.0964 | .5000 | -.5000 | .0964 | .0964 |
| | .6 | -.0818 | .4638 | .7214 | -.1034 | -.0818 | -.0818 | .3820 | -.6180 | .1034 | .1034 |
| | .7 | -.0621 | .3306 | .8314 | -.0999 | -.0621 | -.0621 | .2685 | -.7315 | .0999 | .0999 |
| | .8 | -.0401 | .2041 | .9193 | -.0833 | -.0401 | -.0401 | .1640 | -.8360 | .0833 | .0833 |
| .9 | -.0185 | .0915 | .9779 | -.0509 | -.0185 | -.0185 | .0730 | -.9270 | .0509 | .0509 | |
| SPAN 3 | C | 0 | 0 | 1.0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 0 |
| | .1 | .0115 | -.0560 | .9865 | .0580 | .0115 | .0115 | -.0445 | -.0445 | .9420 | -.0580 |
| | .2 | .0193 | -.0943 | .9457 | .1293 | .0193 | .0193 | -.0750 | -.0750 | .8707 | -.1293 |
| | .3 | .0239 | -.1168 | .8806 | .2123 | .0239 | .0239 | -.0929 | -.0929 | .7877 | -.2123 |
| | .4 | .0257 | -.1257 | .7943 | .3057 | .0257 | .0257 | -.1000 | -.1000 | .6943 | -.3057 |
| | .5 | .0251 | -.1227 | .6897 | .4079 | .0251 | .0251 | -.0976 | -.0976 | .5921 | -.4079 |
| | .6 | .0225 | -.1100 | .5700 | .5175 | .0225 | .0225 | -.0875 | -.0875 | .4825 | -.5175 |
| | .7 | .0183 | -.0894 | .4381 | .6330 | .0183 | .0183 | -.0711 | -.0711 | .3670 | -.6330 |
| | .8 | .0129 | -.0629 | .2971 | .7529 | .0129 | .0129 | -.0500 | -.0500 | .2471 | -.7529 |
| .9 | .0066 | -.0324 | .1501 | .8757 | .0066 | .0066 | -.0258 | -.0258 | .1243 | -.8757 | |
| D | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | -1.0 | |
| + Area | | .4554 | 1.3036 | 1.3036 | .4554 | .4554 | .0167 | .6651 | .0651 | .6385 | .0772 |
| - Area | | -.0772 | -.0818 | -.0818 | -.0772 | -.0772 | -.6385 | -.0651 | -.6651 | -.0167 | -.4552 |
| Total Area | | .3782 | 1.2218 | 1.2218 | .3782 | .3782 | -.6218 | .6000 | -.6000 | .6218 | -.3782 |

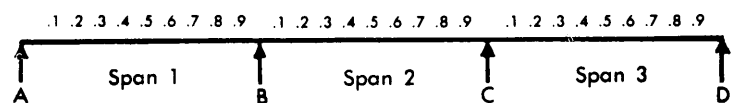
Influence coefficients — Three continuous spans.

L = Length of EXTERIOR spans; length of interior spans = NL.

N=1.2

| Unit load at | MOMENTS/PL | | | | | | | | | | | | | | | | | | | | | |
|--------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | SPAN 1 | | | | | | | | | | | SPAN 2 | | | | | | | | | | |
| | A | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | B | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | C | |
| SPAN 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0877 | .0753 | .0630 | .0506 | .0383 | .0260 | .0136 | .0013 | -.0111 | -.0234 | -.0204 | -.0174 | -.0144 | -.0114 | -.0084 | -.0054 | -.0024 | .0006 | .0036 | .0066 |
| | .2 | 0 | .0755 | .1509 | .1264 | .1019 | .0773 | .0528 | .0282 | .0037 | .0208 | -.0454 | -.0395 | -.0337 | -.0279 | -.0221 | -.0163 | -.0105 | -.0046 | .0012 | .0070 | .0128 |
| | .3 | 0 | .0636 | .1271 | .1907 | .1542 | .1178 | .0813 | .0449 | .0084 | -.0280 | -.0645 | -.0562 | -.0480 | -.0397 | -.0314 | -.0231 | -.0149 | -.0066 | .0017 | .0100 | .0182 |
| | .4 | 0 | .0521 | .1041 | .1562 | .2082 | .1603 | .1124 | .0644 | .0165 | -.0314 | -.0794 | -.0692 | -.0590 | -.0488 | -.0387 | -.0285 | -.0183 | -.0081 | .0021 | .0123 | .0224 |
| | .5 | 0 | .0411 | .0823 | .1234 | .1646 | .2057 | .1468 | .0880 | .0291 | -.0297 | -.0886 | -.0772 | -.0659 | -.0545 | -.0431 | -.0318 | -.0204 | -.0091 | .0023 | .0137 | .0250 |
| | .6 | 0 | .0309 | .0619 | .0928 | .1237 | .1546 | .1856 | .1165 | .0474 | -.0217 | -.0907 | -.0791 | -.0675 | -.0558 | -.0442 | -.0325 | -.0209 | -.0093 | .0024 | .0140 | .0256 |
| | .7 | 0 | .0216 | .0431 | .0647 | .0863 | .1078 | .1294 | .1510 | .0725 | -.0059 | -.0843 | -.0735 | -.0627 | -.0519 | -.0411 | -.0303 | -.0194 | -.0086 | .0022 | .0130 | .0238 |
| | .8 | 0 | .0132 | .0264 | .0396 | .0528 | .0660 | .0792 | .0924 | .1056 | .0188 | -.0680 | -.0593 | -.0506 | -.0419 | -.0331 | -.0244 | -.0157 | -.0070 | .0018 | .0105 | .0192 |
| | .9 | 0 | .0060 | .0119 | .0179 | .0238 | .0298 | .0358 | .0417 | .0477 | .0536 | -.0404 | -.0352 | -.0300 | -.0249 | -.0197 | -.0145 | -.0093 | -.0041 | .0011 | .0062 | .0114 |
| SPAN 2 | B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | -.0057 | -.0114 | -.0171 | -.0228 | -.0286 | -.0343 | -.0400 | -.0457 | -.0514 | -.0571 | .0636 | .0543 | .0450 | .0356 | .0263 | .0170 | .0077 | -.0016 | -.0109 | -.0202 |
| | .2 | 0 | -.0093 | -.0187 | -.0280 | -.0373 | -.0467 | -.0560 | -.0653 | -.0747 | -.0840 | -.0933 | .0156 | .1245 | .1034 | .0823 | .0613 | .0402 | .0191 | -.0020 | -.0231 | -.0442 |
| | .3 | 0 | -.0112 | -.0223 | -.0335 | -.0447 | -.0559 | -.0670 | -.0782 | -.0894 | -.1006 | -.1117 | -.0164 | .0789 | .1742 | .1395 | .1048 | .0701 | .0354 | .0007 | -.0340 | -.0687 |
| | .4 | 0 | -.0115 | -.0231 | -.0346 | -.0462 | -.0577 | -.0692 | -.0808 | -.0923 | -.1039 | -.1154 | -.0350 | .0455 | .1260 | .2064 | .1569 | .1073 | .0578 | .0083 | .0413 | -.0908 |
| | .5 | 0 | -.0107 | -.0215 | -.0322 | -.0430 | -.0537 | -.0644 | -.0752 | -.0859 | -.0967 | -.1074 | -.0424 | .0226 | .0876 | .1526 | .2176 | .1526 | .0876 | .0226 | -.0424 | -.1074 |
| | .6 | 0 | -.0091 | -.0182 | -.0272 | -.0363 | -.0454 | -.0545 | -.0636 | -.0727 | -.0817 | -.0908 | -.0413 | .0083 | .0578 | .1073 | .1569 | .2064 | .1260 | .0455 | -.0350 | -.1154 |
| | .7 | 0 | -.0069 | -.0137 | -.0206 | -.0275 | -.0344 | -.0412 | -.0481 | -.0550 | -.0618 | -.0687 | -.0340 | .0007 | .0354 | .0701 | .1048 | .1395 | .1742 | .0789 | -.0164 | -.1117 |
| | .8 | 0 | -.0044 | -.0088 | -.0132 | -.0177 | -.0221 | -.0265 | -.0309 | -.0353 | -.0397 | -.0442 | -.0231 | -.0020 | .0191 | .0402 | .0613 | .0823 | .1034 | .1245 | .0156 | -.0933 |
| | .9 | 0 | -.0020 | -.0040 | -.0061 | -.0081 | -.0101 | -.0121 | -.0142 | -.0162 | -.0182 | -.0202 | -.0109 | -.0016 | .0077 | .0170 | .0263 | .0356 | .0450 | .0543 | .0636 | -.0571 |
| SPAN 3 | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0011 | .0023 | .0034 | .0046 | .0057 | .0068 | .0080 | .0091 | .0103 | .0114 | .0062 | .0011 | -.0041 | -.0093 | -.0145 | -.0197 | -.0249 | -.0300 | -.0352 | -.0404 |
| | .2 | 0 | .0019 | .0038 | .0058 | .0077 | .0096 | .0115 | .0134 | .0154 | .0173 | .0192 | .0105 | .0018 | -.0070 | -.0157 | -.0244 | -.0331 | -.0419 | -.0506 | -.0593 | -.0680 |
| | .3 | 0 | .0024 | .0048 | .0071 | .0095 | .0119 | .0143 | .0167 | .0190 | .0214 | .0238 | .0130 | .0022 | -.0086 | -.0194 | -.0303 | -.0411 | -.0519 | -.0627 | -.0735 | -.0843 |
| | .4 | 0 | .0026 | .0051 | .0077 | .0102 | .0128 | .0154 | .0179 | .0205 | .0230 | .0256 | .0140 | .0024 | -.0093 | -.0209 | -.0325 | -.0442 | -.0558 | -.0675 | -.0791 | -.0907 |
| | .5 | 0 | .0025 | .0050 | .0075 | .0100 | .0125 | .0150 | .0175 | .0200 | .0225 | .0250 | .0137 | .0023 | -.0091 | -.0204 | -.0318 | -.0431 | -.0545 | -.0659 | -.0772 | -.0886 |
| | .6 | 0 | .0022 | .0045 | .0067 | .0090 | .0112 | .0134 | .0157 | .0179 | .0202 | .0224 | .0123 | .0021 | -.0081 | -.0183 | -.0285 | -.0387 | -.0488 | -.0590 | -.0692 | -.0794 |
| | .7 | 0 | .0018 | .0036 | .0055 | .0073 | .0091 | .0109 | .0127 | .0146 | .0164 | .0182 | .0100 | .0017 | -.0066 | -.0149 | -.0231 | -.0314 | -.0397 | -.0480 | -.0562 | -.0645 |
| | .8 | 0 | .0013 | .0026 | .0038 | .0051 | .0064 | .0077 | .0090 | .0102 | .0115 | .0128 | .0070 | .0012 | -.0046 | -.0105 | -.0163 | -.0221 | -.0279 | -.0337 | -.0395 | -.0454 |
| | .9 | 0 | .0007 | .0013 | .0020 | .0026 | .0033 | .0040 | .0046 | .0053 | .0059 | .0066 | .0036 | .0006 | -.0024 | -.0054 | -.0084 | -.0114 | -.0144 | -.0174 | -.0204 | -.0234 |
| D | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| + Area | 0 | .0408 | .0715 | .0923 | .1031 | .1038 | .0946 | .0754 | .0461 | .0218 | .0167 | .0184 | .0441 | .0844 | .1097 | .1182 | .1097 | .0844 | .0441 | .0184 | .0167 | |
| - Area | 0 | -.0093 | -.0186 | -.0279 | -.0373 | -.0465 | -.0559 | -.0652 | -.0745 | -.0987 | -.1522 | -.0778 | -.0444 | -.0424 | -.0424 | -.0424 | -.0424 | -.0424 | -.0444 | -.0778 | -.1522 | |
| Total Area | 0 | .0315 | .0529 | .0644 | .0658 | .0573 | .0387 | .0102 | -.0284 | -.0769 | -.1355 | -.0594 | -.0003 | .0420 | .0673 | .0758 | .0673 | .0420 | -.0003 | -.0594 | -.1355 | |

TABLE A3.3



| Unit load of | REACTIONS/P | | | | SHEARS/P | | | | | | |
|--------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------|
| | R _A | R _B | R _C | R _D | V _{AB} | V _{BA} | V _{BC} | V _{CB} | V _{CD} | V _{DC} | |
| SPAN 1 | A | 1.0 | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 |
| | .1 | .8766 | .1465 | -.0297 | .0066 | .8766 | -.1234 | .0231 | .0231 | -.0066 | -.0066 |
| | .2 | .7546 | .2901 | -.0575 | .0128 | .7546 | -.2454 | .0447 | .0447 | -.0128 | -.0128 |
| | .3 | .6355 | .4281 | -.0818 | .0182 | .6355 | -.3645 | .0636 | .0636 | -.0182 | -.0182 |
| | .4 | .5206 | .5577 | -.1007 | .0224 | .5206 | -.4794 | .0783 | .0783 | -.0224 | -.0224 |
| | .5 | .4114 | .6760 | -.1124 | .0250 | .4114 | -.5886 | .0874 | .0874 | -.0250 | -.0250 |
| | .6 | .3093 | .7802 | -.1151 | .0256 | .3093 | -.6907 | .0895 | .0895 | -.0256 | -.0256 |
| | .7 | .2157 | .8676 | -.1071 | .0238 | .2157 | -.7843 | .0833 | .0833 | -.0238 | -.0238 |
| | .8 | .1320 | .9352 | -.0864 | .0192 | .1320 | -.8680 | .0672 | .0672 | -.0192 | -.0192 |
| | .9 | .0596 | .9803 | -.0513 | .0114 | .0596 | -.9404 | .0399 | .0399 | -.0114 | -.0114 |
| SPAN 2 | B | 0 | 1.0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 0 | 0 |
| | .1 | -.0571 | .9855 | .0918 | -.0202 | -.0571 | -.0571 | -.9284 | -.0716 | .0202 | .0202 |
| | .2 | -.0933 | .9311 | .2064 | -.0442 | -.0933 | -.0933 | -.8378 | -.1622 | .0442 | .0442 |
| | .3 | -.1117 | .8448 | .3356 | -.0687 | -.1117 | -.1117 | -.7331 | -.2669 | .0687 | .0687 |
| | .4 | -.1154 | .7343 | .4719 | -.0908 | -.1154 | -.1154 | -.6189 | -.3811 | .0908 | .0908 |
| | .5 | -.1074 | .6074 | .6074 | -.1074 | -.1074 | -.1074 | -.5000 | -.5000 | .1074 | .1074 |
| | .6 | -.0908 | .4719 | .7343 | -.1154 | -.0908 | -.0908 | -.3811 | -.6189 | .1154 | .1154 |
| | .7 | -.0687 | .3356 | .8448 | -.1117 | -.0687 | -.0687 | -.2669 | -.7331 | .1117 | .1117 |
| | .8 | -.0442 | .2064 | .9311 | -.0933 | -.0442 | -.0442 | -.1622 | -.8378 | .0933 | .0933 |
| | .9 | -.0202 | .0918 | .9855 | -.0571 | -.0202 | -.0202 | -.0716 | -.9284 | .0571 | .0571 |
| SPAN 3 | C | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | -1.0 | 0 | 0 |
| | .1 | .0114 | -.0513 | .9803 | .0596 | .0114 | .0114 | -.0399 | -.0399 | .9404 | -.0596 |
| | .2 | .0192 | -.0864 | .9352 | .1320 | .0192 | .0192 | -.0672 | -.0672 | .8680 | -.1320 |
| | .3 | .0238 | -.1071 | .8676 | .2157 | .0238 | .0238 | -.0833 | -.0833 | .7843 | -.2157 |
| | .4 | .0256 | -.1151 | .7802 | .3093 | .0256 | .0256 | -.0895 | -.0895 | .6907 | -.3093 |
| | .5 | .0250 | -.1124 | .6760 | .4114 | .0250 | .0250 | -.0874 | -.0874 | .5886 | -.4114 |
| | .6 | .0224 | -.1007 | .5577 | .5206 | .0224 | .0224 | -.0783 | -.0783 | .4794 | -.5206 |
| | .7 | .0182 | -.0818 | .4281 | .6355 | .0182 | .0182 | -.0636 | -.0636 | .3645 | -.6355 |
| | .8 | .0128 | -.0575 | .2901 | .7546 | .0128 | .0128 | -.0447 | -.0447 | .2454 | -.7546 |
| | .9 | .0066 | -.0297 | .1465 | .8766 | .0066 | .0066 | -.0231 | -.0231 | .1234 | -.8766 |
| D | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | -1.0 | |
| + Area | | .4576 | 1.3604 | 1.3604 | .4576 | .4576 | .0167 | .7083 | .0583 | .6522 | .0931 |
| - Area | | -.0931 | -.0749 | -.0749 | -.0931 | -.0931 | -.6522 | -.0583 | -.7083 | -.0167 | -.4576 |
| Total Area | | .3645 | 1.2855 | 1.2855 | .3645 | .3645 | -.6355 | .6500 | -.6500 | .6355 | -.3645 |

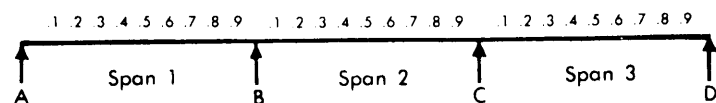
Influence coefficients — Three continuous spans.

L = Length of EXTERIOR spans; length of interior spans = NL.

N=1.3

| Unit load at | MOMENTS/PL | | | | | | | | | | | | | | | | | | | | | |
|--------------|------------|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | SPAN 1 | | | | | | | | | | SPAN 2 | | | | | | | | | | | |
| | A | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | B | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | C | |
| SPAN 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0877 | .0755 | .0632 | .0510 | .0387 | .0265 | .0142 | .0020 | -.0103 | -.0225 | -.0196 | -.0167 | -.0138 | -.0109 | -.0080 | -.0051 | -.0022 | .0008 | .0037 | .0066 |
| | .2 | 0 | .0756 | .1513 | .1269 | .1025 | .0781 | .0538 | .0294 | .0050 | -.0193 | -.0437 | -.0381 | -.0324 | -.0268 | -.0211 | -.0155 | -.0098 | -.0042 | .0015 | .0071 | .0128 |
| | .3 | 0 | .0638 | .1276 | .1914 | .1551 | .1189 | .0827 | .0465 | .0103 | -.0259 | -.0622 | -.0541 | -.0461 | -.0381 | -.0300 | -.0220 | -.0140 | -.0060 | .0021 | .0101 | .0181 |
| | .4 | 0 | .0523 | .1047 | .1570 | .2094 | .1617 | .1141 | .0664 | .0188 | -.0289 | -.0765 | -.0666 | -.0567 | -.0469 | -.0370 | -.0271 | -.0172 | -.0073 | .0026 | .0124 | .0223 |
| | .5 | 0 | .0415 | .0829 | .1244 | .1658 | .2073 | .1488 | .0902 | .0317 | -.0269 | -.0854 | -.0744 | -.0633 | -.0523 | -.0413 | -.0302 | -.0192 | -.0082 | .0028 | .0139 | .0249 |
| | .6 | 0 | .0313 | .0625 | .0938 | .1250 | .1563 | .1875 | .1188 | .0500 | -.0187 | -.0874 | -.0761 | -.0649 | -.0536 | -.0423 | -.0310 | -.0197 | -.0084 | .0029 | .0142 | .0255 |
| | .7 | 0 | .0219 | .0437 | .0656 | .0875 | .1094 | .1312 | .1531 | .0750 | -.0032 | -.0813 | -.0708 | -.0603 | -.0498 | -.0393 | -.0288 | -.0183 | -.0078 | .0027 | .0132 | .0237 |
| | .8 | 0 | .0134 | .0269 | .0403 | .0538 | .0672 | .0807 | .0941 | .1075 | .0210 | -.0656 | -.0571 | -.0486 | -.0402 | -.0317 | -.0232 | -.0148 | -.0063 | .0022 | .0107 | .0191 |
| | .9 | 0 | .0061 | .0122 | .0183 | .0244 | .0305 | .0366 | .0427 | .0489 | .0550 | -.0389 | -.0339 | -.0289 | -.0238 | -.0188 | -.0138 | -.0088 | -.0037 | .0013 | .0063 | .0114 |
| SPAN 2 | B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | -.0063 | -.0127 | -.0190 | -.0254 | -.0317 | -.0381 | -.0444 | -.0508 | -.0571 | -.0634 | .0667 | .0569 | .0470 | .0372 | .0273 | .0175 | .0076 | -.0022 | -.0121 | -.0219 |
| | .2 | 0 | -.0104 | -.0207 | -.0311 | -.0414 | -.0518 | -.0621 | -.0725 | -.0828 | -.0932 | -.1035 | .0140 | .1315 | .1091 | .0866 | .0641 | .0417 | .0192 | -.0033 | -.0257 | -.0482 |
| | .3 | 0 | -.0124 | -.0248 | -.0371 | -.0495 | -.0619 | -.0743 | -.0867 | -.0990 | -.1114 | -.1238 | -.0210 | .0819 | .1847 | .1476 | .1104 | .0733 | .0361 | -.0011 | -.0382 | -.0754 |
| | .4 | 0 | -.0128 | -.0255 | -.0383 | -.0511 | -.0638 | -.0766 | -.0893 | -.1021 | -.1149 | -.1276 | -.0409 | .0459 | .1327 | .2194 | .1662 | .1130 | .0597 | .0065 | -.0467 | -.1000 |
| | .5 | 0 | -.0119 | -.0237 | -.0356 | -.0474 | -.0593 | -.0711 | -.0830 | -.0948 | -.1067 | -.1185 | -.0485 | .0215 | .0915 | .1615 | .2315 | .1615 | .0915 | .0215 | -.0485 | -.1185 |
| | .6 | 0 | -.0100 | -.0200 | -.0300 | -.0400 | -.0500 | -.0600 | -.0700 | -.0800 | -.0900 | -.1000 | -.0467 | .0065 | .0597 | .1130 | .1662 | .2194 | .1327 | .0459 | -.0409 | -.1276 |
| | .7 | 0 | -.0075 | -.0151 | -.0226 | -.0301 | -.0377 | -.0452 | -.0528 | -.0603 | -.0678 | -.0754 | -.0382 | -.0011 | .0361 | .0733 | .1104 | .1476 | .1847 | .0819 | -.0210 | -.1238 |
| | .8 | 0 | -.0048 | -.0096 | -.0145 | -.0193 | -.0241 | -.0289 | -.0337 | -.0386 | -.0434 | -.0482 | -.0257 | -.0033 | .0192 | .0417 | .0641 | .0866 | .1091 | .1315 | .0140 | -.1035 |
| | .9 | 0 | -.0022 | -.0044 | -.0066 | -.0088 | -.0110 | -.0132 | -.0153 | -.0175 | -.0197 | -.0219 | -.0121 | -.0022 | -.0076 | .0175 | .0273 | .0372 | .0470 | .0569 | .0667 | -.0634 |
| SPAN 3 | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0011 | .0023 | .0034 | .0046 | .0057 | .0068 | .0080 | .0091 | .0103 | .0114 | .0063 | .0013 | -.0037 | -.0088 | -.0138 | -.0188 | -.0238 | -.0289 | -.0339 | -.0389 |
| | .2 | 0 | .0019 | .0038 | .0057 | .0076 | .0096 | .0115 | .0134 | .0153 | .0172 | .0191 | .0107 | .0022 | -.0063 | -.0148 | -.0232 | -.0317 | -.0402 | -.0486 | -.0571 | -.0656 |
| | .3 | 0 | .0024 | .0047 | .0071 | .0095 | .0119 | .0142 | .0166 | .0190 | .0213 | .0237 | .0132 | .0027 | -.0078 | -.0183 | -.0288 | -.0393 | -.0498 | -.0603 | -.0708 | -.0813 |
| | .4 | 0 | .0026 | .0051 | .0077 | .0102 | .0128 | .0153 | .0179 | .0204 | .0230 | .0255 | .0142 | .0029 | -.0084 | -.0197 | -.0310 | -.0423 | -.0536 | -.0649 | -.0761 | -.0874 |
| | .5 | 0 | .0025 | .0050 | .0075 | .0100 | .0125 | .0149 | .0174 | .0199 | .0224 | .0249 | .0139 | .0028 | -.0082 | -.0192 | -.0302 | -.0413 | -.0523 | -.0633 | -.0744 | -.0854 |
| | .6 | 0 | .0022 | .0045 | .0067 | .0089 | .0112 | .0134 | .0156 | .0178 | .0201 | .0223 | .0124 | .0026 | -.0073 | -.0172 | -.0271 | -.0370 | -.0469 | -.0567 | -.0666 | -.0765 |
| | .7 | 0 | .0018 | .0036 | .0054 | .0072 | .0091 | .0109 | .0127 | .0145 | .0163 | .0181 | .0101 | .0021 | -.0060 | -.0140 | -.0220 | -.0300 | -.0381 | -.0461 | -.0541 | -.0622 |
| | .8 | 0 | .0013 | .0026 | .0038 | .0051 | .0064 | .0077 | .0090 | .0102 | .0115 | .0128 | .0071 | .0015 | -.0042 | -.0098 | -.0155 | -.0211 | -.0268 | -.0324 | -.0381 | -.0437 |
| | .9 | 0 | .0007 | .0013 | .0020 | .0026 | .0033 | .0040 | .0046 | .0053 | .0059 | .0066 | .0037 | .0008 | -.0022 | -.0051 | -.0080 | -.0109 | -.0138 | -.0167 | -.0196 | -.0225 |
| D | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| + Area | | 0 | .0410 | .0719 | .0929 | .1038 | .1048 | .0958 | .0768 | .0477 | .0221 | .0166 | .0194 | .0490 | .0952 | .1246 | .1344 | .1246 | .0952 | .0490 | .0194 | .0166 |
| - Area | | 0 | -.0111 | -.0221 | -.0332 | -.0442 | -.0553 | -.0664 | -.0775 | -.0885 | -.1130 | -.1676 | -.0822 | -.0432 | -.0404 | -.0404 | -.0404 | -.0404 | -.0404 | -.0432 | -.0822 | -.1676 |
| Total Area | | 0 | .0299 | .0498 | .0597 | .0596 | .0495 | .0294 | -.0007 | -.0408 | -.0909 | -.1510 | -.0628 | .0058 | .0548 | .0842 | .0940 | .0842 | .0548 | .0058 | .0628 | .1510 |

TABLE A3.4



| Unit load at | REACTIONS/P | | | | SHEARS/P | | | | | | |
|--------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------|
| | R _A | R _B | R _C | R _D | V _{AB} | V _{BA} | V _{BC} | V _{CB} | V _{CD} | V _{DC} | |
| SPAN 1 | A | 1.0 | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 |
| | .1 | .8774 | .1433 | -.0273 | .0066 | .8774 | -.1226 | .0207 | .0207 | -.0066 | -.0066 |
| | .2 | .7563 | .2841 | -.0532 | .0128 | .7563 | -.2437 | .0404 | .0404 | -.0128 | -.0128 |
| | .3 | .6378 | .4195 | -.0754 | .0181 | .6378 | -.3622 | .0573 | .0573 | -.0181 | -.0181 |
| | .4 | .5235 | .5471 | -.0929 | .0223 | .5235 | -.4765 | .0706 | .0706 | -.0223 | -.0223 |
| | .5 | .4146 | .6642 | -.1037 | .0249 | .4146 | -.5854 | .0788 | .0788 | -.0249 | -.0249 |
| | .6 | .3126 | .7681 | -.1062 | .0255 | .3126 | -.6874 | .0807 | .0807 | -.0255 | -.0255 |
| | .7 | .2187 | .8563 | -.0987 | .0237 | .2187 | -.7813 | .0750 | .0750 | -.0237 | -.0237 |
| | .8 | .1344 | .9261 | -.0796 | .0191 | .1344 | -.8656 | .0605 | .0605 | -.0191 | -.0191 |
| | .9 | .0611 | .9749 | -.0474 | .0114 | .0611 | -.9389 | .0360 | .0360 | -.0114 | -.0114 |
| SPAN 2 | B | 0 | 1.0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 1.0 | 0 |
| | .1 | -.0634 | .9931 | .0922 | -.0219 | -.0634 | -.0634 | .9297 | -.0703 | .0219 | .0219 |
| | .2 | -.1035 | .9431 | .2086 | -.0482 | -.1035 | -.1035 | .8396 | -.1604 | .0482 | .0482 |
| | .3 | -.1238 | .8584 | .3408 | -.0754 | -.1238 | -.1238 | .7346 | -.2654 | .0754 | .0754 |
| | .4 | -.1276 | .7474 | .4802 | -.1000 | -.1276 | -.1276 | .6198 | -.3802 | .1000 | .1000 |
| | .5 | -.1185 | .6185 | .6185 | -.1185 | -.1185 | -.1185 | .5000 | -.5000 | .1185 | .1185 |
| | .6 | -.1000 | .4802 | .7474 | -.1276 | -.1000 | -.1000 | .3802 | -.6198 | .1276 | .1276 |
| | .7 | -.0754 | .3408 | .8584 | -.1238 | -.0754 | -.0754 | .2654 | -.7346 | .1238 | .1238 |
| | .8 | -.0482 | .2086 | .9431 | -.1035 | -.0482 | -.0482 | .1604 | -.8396 | .1035 | .1035 |
| | .9 | -.0219 | .0922 | .9931 | -.0634 | -.0219 | -.0219 | .0703 | -.9297 | .0634 | .0634 |
| SPAN 3 | C | 0 | 0 | 1.0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 1.0 |
| | .1 | .0114 | -.0474 | .9749 | .0611 | .0114 | .0114 | -.0360 | -.0360 | .9389 | -.0611 |
| | .2 | .0191 | -.0796 | .9261 | .1344 | .0191 | .0191 | -.0605 | -.0605 | .8656 | -.1344 |
| | .3 | .0237 | -.0987 | .8563 | .2187 | .0237 | .0237 | -.0750 | -.0750 | .7813 | -.2187 |
| | .4 | .0255 | -.1062 | .7681 | .3126 | .0255 | .0255 | -.0807 | -.0807 | .6874 | -.3126 |
| | .5 | .0249 | -.1037 | .6642 | .4146 | .0249 | .0249 | -.0788 | -.0788 | .5854 | -.4146 |
| | .6 | .0223 | -.0929 | .5471 | .5235 | .0223 | .0223 | -.0706 | -.0706 | .4765 | -.5235 |
| | .7 | .0181 | -.0754 | .4195 | .6378 | .0181 | .0181 | -.0573 | -.0573 | .3622 | -.6378 |
| | .8 | .0128 | -.0532 | .2841 | .7563 | .0128 | .0128 | -.0404 | -.0404 | .2437 | -.7563 |
| | .9 | .0066 | -.0273 | .1433 | .8774 | .0066 | .0066 | -.0207 | -.0207 | .1226 | -.8774 |
| D | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | -1.0 | |
| + Area | .4597 | 1.4201 | 1.4201 | .4597 | .4597 | .0166 | .7525 | .0525 | .6676 | .1107 | |
| - Area | -.1107 | -.0691 | -.0691 | -.1107 | -.1107 | -.6676 | -.0525 | -.7525 | -.0166 | -.4597 | |
| Total Area | .3490 | 1.3510 | 1.3510 | .3490 | .3490 | -.6510 | .7000 | -.7000 | .6510 | -.3490 | |

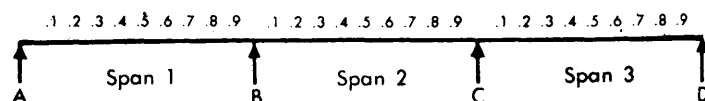
Influence coefficients — Three continuous spans.

L = Length of EXTERIOR spans; length of interior spans = NL.

N=1.4

| Unit load at | MOMENTS/PL | | | | | | | | | | | | | | | | | | | | | |
|--------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | SPAN 1 | | | | | | | | | | SPAN 2 | | | | | | | | | | | |
| | A | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | B | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | C | |
| SPAN 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0878 | .0756 | .0635 | .0513 | .0391 | .0269 | .0148 | .0026 | -.0096 | -.0218 | -.0189 | -.0161 | -.0133 | -.0104 | -.0076 | -.0048 | -.0020 | .0009 | .0037 | .0065 |
| | .2 | 0 | .0758 | .1516 | .1273 | .1031 | .0789 | .0547 | .0305 | .0062 | -.0180 | -.0422 | -.0367 | -.0312 | -.0257 | -.0203 | -.0148 | -.0093 | -.0038 | .0017 | .0072 | .0127 |
| | .3 | 0 | .0640 | .1280 | .1920 | .1560 | .1200 | .0840 | .0480 | .0120 | -.0240 | -.0600 | -.0522 | -.0444 | -.0366 | -.0288 | -.0210 | -.0132 | -.0054 | .0024 | .0102 | .0180 |
| | .4 | 0 | .0526 | .1052 | .1578 | .2105 | .1631 | .1157 | .0683 | .0209 | -.0265 | -.0738 | -.0642 | -.0546 | -.0450 | -.0354 | -.0258 | -.0162 | -.0066 | .0030 | .0126 | .0222 |
| | .5 | 0 | .0418 | .0835 | .1253 | .1670 | .2088 | .1505 | .0923 | .0341 | -.0242 | -.0824 | -.0717 | -.0610 | -.0503 | -.0396 | -.0288 | -.0181 | -.0074 | .0033 | .0140 | .0247 |
| | .6 | 0 | .0316 | .0631 | .0947 | .1262 | .1578 | .1894 | .1209 | .0525 | -.0160 | -.0844 | -.0734 | -.0625 | -.0515 | -.0406 | -.0295 | -.0186 | -.0076 | .0034 | .0143 | .0253 |
| | .7 | 0 | .0222 | .0443 | .0665 | .0886 | .1108 | .1329 | .1551 | .1772 | -.0006 | -.0785 | -.0683 | -.0581 | -.0479 | -.0377 | -.0275 | -.0173 | -.0071 | .0031 | .0133 | .0235 |
| | .8 | 0 | .0137 | .0273 | .0410 | .0547 | .0684 | .0820 | .0957 | .1094 | .0230 | -.0633 | -.0551 | -.0468 | -.0386 | -.0304 | -.0222 | -.0139 | -.0057 | .0025 | .0108 | .0190 |
| .9 | 0 | .0062 | .0125 | .0187 | .0250 | .0312 | .0375 | .0437 | .0499 | .0562 | -.0376 | -.0327 | -.0278 | -.0229 | -.0180 | -.0132 | -.0083 | -.0034 | .0015 | .0064 | .0113 | |
| SPAN 2 | B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | -.0070 | -.0140 | -.0210 | -.0279 | -.0349 | -.0419 | -.0489 | -.0559 | -.0629 | -.0699 | .0698 | .0594 | .0490 | .0386 | .0283 | .0179 | .0075 | -.0028 | -.0132 | -.0236 |
| | .2 | 0 | -.0114 | -.0228 | -.0342 | -.0456 | -.0570 | -.0684 | -.0798 | -.0911 | -.1025 | -.1139 | .0122 | .1384 | .1146 | .0908 | .0669 | .0431 | .0193 | -.0046 | -.0284 | -.0522 |
| | .3 | 0 | -.0136 | -.0272 | -.0408 | -.0544 | -.0680 | -.0816 | -.0952 | -.1088 | -.1224 | -.1360 | -.0256 | .0848 | .1952 | .1556 | .1160 | .0764 | .0368 | -.0028 | -.0424 | -.0820 |
| | .4 | 0 | -.0140 | -.0280 | -.0420 | -.0560 | -.0700 | -.0840 | -.0980 | -.1120 | -.1260 | -.1400 | -.0470 | .0461 | .1392 | .2323 | .1754 | .1185 | .0616 | .0046 | -.0523 | -.1092 |
| | .5 | 0 | -.0130 | -.0260 | -.0389 | -.0519 | -.0649 | -.0779 | -.0909 | -.1038 | -.1168 | -.1298 | -.0548 | .0202 | .0952 | .1702 | .2452 | .1702 | .0952 | .0202 | -.0548 | -.1298 |
| | .6 | 0 | -.0109 | -.0218 | -.0328 | -.0437 | -.0546 | -.0655 | -.0764 | -.0873 | -.0983 | -.1092 | -.0523 | .0046 | .0616 | .1185 | .1754 | .2323 | .1392 | .0461 | -.0470 | -.1400 |
| | .7 | 0 | -.0082 | -.0164 | -.0246 | -.0328 | -.0410 | -.0492 | -.0574 | -.0656 | -.0738 | -.0820 | -.0424 | -.0028 | .0368 | .0764 | .1160 | .1556 | .1952 | .0848 | -.0256 | -.1360 |
| | .8 | 0 | -.0052 | -.0104 | -.0157 | -.0209 | -.0261 | -.0313 | -.0366 | -.0418 | -.0470 | -.0522 | -.0284 | -.0046 | .0193 | .0431 | .0669 | .0908 | .1146 | .1384 | .0122 | -.1139 |
| .9 | 0 | -.0024 | -.0047 | -.0071 | -.0094 | -.0118 | -.0142 | -.0165 | -.0189 | -.0212 | -.0236 | -.0132 | -.0028 | .0075 | .0179 | .0283 | .0386 | .0490 | .0594 | .0698 | -.0699 | |
| SPAN 3 | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0011 | .0023 | .0034 | .0045 | .0057 | .0068 | .0079 | .0090 | .0102 | .0113 | .0064 | .0015 | -.0034 | -.0083 | -.0132 | -.0180 | -.0229 | -.0278 | -.0327 | -.0376 |
| | .2 | 0 | .0019 | .0038 | .0057 | .0076 | .0095 | .0114 | .0133 | .0152 | .0171 | .0190 | .0108 | .0025 | -.0057 | -.0139 | -.0222 | -.0304 | -.0386 | -.0468 | -.0551 | -.0633 |
| | .3 | 0 | .0024 | .0047 | .0071 | .0094 | .0118 | .0141 | .0165 | .0188 | .0212 | .0235 | .0133 | .0031 | -.0071 | -.0173 | -.0275 | -.0377 | -.0479 | -.0581 | -.0683 | -.0785 |
| | .4 | 0 | .0025 | .0051 | .0076 | .0101 | .0127 | .0152 | .0177 | .0202 | .0228 | .0253 | .0143 | .0034 | -.0076 | -.0186 | -.0295 | -.0406 | -.0515 | -.0625 | -.0734 | -.0844 |
| | .5 | 0 | .0025 | .0049 | .0074 | .0099 | .0124 | .0148 | .0173 | .0198 | .0222 | .0247 | .0140 | .0033 | -.0074 | -.0181 | -.0288 | -.0396 | -.0503 | -.0610 | -.0717 | -.0824 |
| | .6 | 0 | .0022 | .0044 | .0067 | .0089 | .0111 | .0133 | .0155 | .0178 | .0200 | .0222 | .0126 | .0030 | -.0066 | -.0162 | -.0258 | -.0354 | -.0450 | -.0546 | -.0642 | -.0738 |
| | .7 | 0 | .0018 | .0036 | .0054 | .0072 | .0090 | .0108 | .0126 | .0144 | .0162 | .0180 | .0102 | .0024 | -.0054 | -.0132 | -.0210 | -.0288 | -.0366 | -.0444 | -.0522 | -.0600 |
| | .8 | 0 | .0013 | .0025 | .0038 | .0051 | .0064 | .0076 | .0089 | .0102 | .0114 | .0127 | .0072 | .0017 | -.0038 | -.0093 | -.0148 | -.0203 | -.0257 | -.0312 | -.0367 | -.0422 |
| .9 | 0 | .0007 | .0013 | .0020 | .0026 | .0033 | .0039 | .0046 | .0052 | .0059 | .0065 | .0037 | .0009 | -.0020 | -.0048 | -.0076 | -.0104 | -.0133 | -.0161 | -.0189 | -.0218 | |
| D | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| + Area | 0 | .0412 | .0723 | .0934 | .1046 | .1057 | .0969 | .0781 | .0492 | .0225 | .0166 | .0204 | .0539 | .1065 | .1402 | .1515 | .1402 | .1065 | .0539 | .0204 | .0166 | |
| - Area | 0 | -.0130 | -.0260 | -.0389 | -.0519 | -.0648 | -.0779 | -.0909 | -.1038 | -.1289 | -.1848 | -.0874 | -.0422 | -.0385 | -.0385 | -.0385 | -.0385 | -.0385 | -.0422 | -.0874 | -.1848 | |
| Total Area | 0 | .0282 | .0463 | .0545 | .0527 | .0409 | .0190 | -.0128 | -.0546 | -.1064 | -.1682 | -.0670 | .0117 | .0680 | .1017 | .1130 | .1017 | .0680 | .0117 | -.0670 | -.1682 | |

TABLE A3.5



| Unit load of | REACTIONS/P | | | | SHEARS/P | | | | | | |
|--------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------|
| | R _A | R _B | R _C | R _D | V _{AB} | V _{BA} | V _{BC} | V _{CB} | V _{CD} | V _{DC} | |
| SPAN 1 | A | 1.0 | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 |
| | .1 | .8782 | .1406 | -.0253 | .0065 | .8782 | -.1218 | .0188 | .0188 | -.0065 | -.0065 |
| | .2 | .7578 | .2788 | -.0493 | .0127 | .7578 | -.2422 | .0366 | .0366 | -.0127 | -.0127 |
| | .3 | .6400 | .4120 | -.0700 | .0180 | .6400 | -.3600 | .0520 | .0520 | -.0180 | -.0180 |
| | .4 | .5262 | .5378 | -.0862 | .0222 | .5262 | -.4738 | .0640 | .0640 | -.0222 | -.0222 |
| | .5 | .4176 | .6538 | -.0961 | .0247 | .4176 | -.5824 | .0714 | .0714 | -.0247 | -.0247 |
| | .6 | .3156 | .7575 | -.0984 | .0253 | .3156 | -.6844 | .0731 | .0731 | -.0253 | -.0253 |
| | .7 | .2215 | .8465 | -.0915 | .0235 | .2215 | -.7785 | .0680 | .0680 | -.0235 | -.0235 |
| | .8 | .1367 | .9182 | -.0739 | .0190 | .1367 | -.8633 | .0549 | .0549 | -.0190 | -.0190 |
| | .9 | .0624 | .9702 | -.0439 | .0113 | .0624 | -.9376 | .0326 | .0326 | -.0113 | -.0113 |
| SPAN 2 | B | 0 | 1.0 | 0 | 0 | 0 | -1.0 0 | 0 1.0 | 0 | 0 | 0 |
| | .1 | -.0699 | 1.0007 | .0928 | -.0236 | -.0699 | -.0699 | .9308 | -.0692 | .0236 | .0236 |
| | .2 | -.1139 | .9551 | .2110 | -.0522 | -.1139 | -.1139 | .8412 | -.1588 | .0522 | .0522 |
| | .3 | -.1360 | .8720 | .3460 | -.0820 | -.1360 | -.1360 | .7360 | -.2640 | .0820 | .0820 |
| | .4 | -.1400 | .7606 | .4886 | -.1092 | -.1400 | -.1400 | .6206 | -.3794 | .1092 | .1092 |
| | .5 | -.1298 | .6298 | .6298 | -.1298 | -.1298 | -.1298 | .5000 | -.5000 | .1298 | .1298 |
| | .6 | -.1092 | .4886 | .7606 | -.1400 | -.1092 | -.1092 | .3794 | -.6206 | .1400 | .1400 |
| | .7 | -.0820 | .3460 | .8720 | -.1360 | -.0820 | -.0820 | .2640 | -.7360 | .1360 | .1360 |
| | .8 | -.0522 | .2110 | .9551 | -.1139 | -.0522 | -.0522 | .1588 | -.8412 | .1139 | .1139 |
| | .9 | -.0236 | .0928 | 1.0007 | -.0699 | -.0236 | -.0236 | .0692 | -.9308 | .0699 | .0699 |
| SPAN 3 | C | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | -1.0 0 | 0 1.0 | 0 |
| | .1 | .0113 | -.0439 | .9702 | .0624 | .0113 | .0113 | -.0326 | -.0326 | .9376 | -.0624 |
| | .2 | .0190 | -.0739 | .9182 | .1367 | .0190 | .0190 | -.0549 | -.0549 | .8633 | -.1367 |
| | .3 | .0235 | -.0915 | .8465 | .2215 | .0235 | .0235 | -.0680 | -.0680 | .7785 | -.2215 |
| | .4 | .0253 | -.0984 | .7575 | .3156 | .0253 | .0253 | -.0731 | -.0731 | .6844 | -.3156 |
| | .5 | .0247 | -.0961 | .6538 | .4176 | .0247 | .0247 | -.0714 | -.0714 | .5824 | -.4176 |
| | .6 | .0222 | -.0862 | .5378 | .5262 | .0222 | .0222 | -.0640 | -.0640 | .4738 | -.5262 |
| | .7 | .0180 | -.0700 | .4120 | .6400 | .0180 | .0180 | -.0520 | -.0520 | .3600 | -.6400 |
| | .8 | .0127 | -.0493 | .2788 | .7578 | .0127 | .0127 | -.0366 | -.0366 | .2422 | -.7578 |
| | .9 | .0065 | -.0253 | .1406 | .8782 | .0065 | .0065 | -.0188 | -.0188 | .1218 | -.8782 |
| D | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | -1.0 | |
| + Area | | .4615 | 1.4824 | 1.4824 | .4615 | .4615 | .0165 | .7976 | .0476 | .6847 | .1298 |
| - Area | | -.1298 | -.0641 | -.0641 | -.1298 | -.1298 | -.6847 | -.0476 | -.7976 | -.0165 | -.4615 |
| Total Area | | .3317 | 1.4183 | 1.4183 | .3317 | .3317 | -.6682 | .7500 | -.7500 | .6682 | -.3317 |

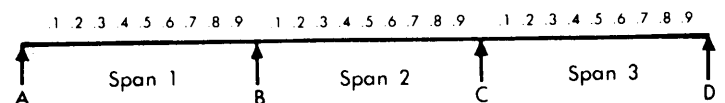
Influence coefficients — Three continuous spans.

L = Length of EXTERIOR spans; length of interior spans = NL.

N=1.5

| Unit load at | MOMENTS/PL | | | | | | | | | | | | | | | | | | | | | |
|--------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | SPAN 1 | | | | | | | | | | SPAN 2 | | | | | | | | | | | |
| | A | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | B | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | C | |
| SPAN 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0879 | .0758 | .0637 | .0516 | .0395 | .0274 | .0153 | .0032 | -.0089 | -.0210 | -.0183 | -.0155 | -.0128 | -.0100 | -.0073 | -.0045 | -.0018 | .0010 | .0037 | .0065 |
| | .2 | 0 | .0759 | .1598 | .1278 | .1037 | .0796 | .0555 | .0315 | .0074 | -.0167 | -.0408 | -.0355 | -.0301 | -.0248 | -.0195 | -.0141 | -.0088 | -.0035 | .0019 | .0072 | .0125 |
| | .3 | 0 | .0642 | .1284 | .1926 | .1568 | .1210 | .0852 | .0494 | .0136 | -.0222 | -.0580 | -.0504 | -.0428 | -.0352 | -.0277 | -.0201 | -.0125 | -.0049 | .0027 | .0103 | .0178 |
| | .4 | 0 | .0529 | .1057 | .1586 | .2115 | .1643 | .1172 | .0700 | .0229 | -.0242 | -.0714 | -.0620 | -.0527 | -.0434 | -.0340 | -.0247 | -.0154 | -.0060 | .0033 | .0126 | .0220 |
| | .5 | 0 | .0420 | .0841 | .1261 | .1681 | .2102 | .1522 | .0942 | .0363 | -.0217 | -.0797 | -.0692 | -.0588 | -.0484 | -.0380 | -.0276 | -.0172 | -.0067 | .0037 | .0141 | .0245 |
| | .6 | 0 | .0318 | .0637 | .0955 | .1274 | .1592 | .1911 | .1229 | .0547 | -.0134 | -.0816 | -.0709 | -.0602 | -.0496 | -.0389 | -.0282 | -.0176 | -.0069 | .0038 | .0144 | .0251 |
| | .7 | 0 | .0224 | .0448 | .0673 | .0897 | .1121 | .1345 | .1569 | .0793 | .0018 | -.0758 | -.0659 | -.0560 | -.0461 | -.0362 | -.0262 | -.0163 | -.0064 | .0035 | .0134 | .0233 |
| | .8 | 0 | .0139 | .0278 | .0416 | .0555 | .0694 | .0833 | .0972 | .1111 | .0249 | -.0612 | -.0532 | -.0452 | -.0372 | -.0292 | -.0212 | -.0132 | -.0052 | .0028 | .0108 | .0188 |
| .9 | 0 | .0064 | .0127 | .0191 | .0255 | .0318 | .0382 | .0446 | .0509 | .0573 | -.0363 | -.0316 | -.0268 | -.0221 | -.0173 | -.0125 | -.0078 | -.0031 | .0017 | .0064 | .0112 | |
| SPAN 2 | B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | -.0076 | -.0153 | -.0229 | -.0306 | -.0382 | -.0459 | -.0535 | -.0611 | -.0688 | -.0764 | .0727 | .0618 | .0509 | .0401 | .0292 | .0183 | .0074 | -.0035 | -.0143 | -.0252 |
| | .2 | 0 | -.0124 | -.0249 | -.0373 | -.0498 | -.0622 | -.0747 | -.0871 | -.0996 | -.1120 | -.1245 | .0103 | .1452 | .1200 | .0948 | .0696 | .0445 | .0193 | -.0059 | -.0310 | -.0562 |
| | .3 | 0 | -.0148 | -.0297 | -.0445 | -.0594 | -.0742 | -.0891 | -.1039 | -.1188 | -.1336 | -.1485 | -.0305 | .0875 | .2055 | .1634 | .1214 | .0794 | .0374 | -.0047 | -.0467 | -.0887 |
| | .4 | 0 | -.0153 | -.0305 | -.0458 | -.0610 | -.0763 | -.0916 | -.1068 | -.1221 | -.1373 | -.1526 | -.0532 | .0462 | .1456 | .2451 | .1845 | .1239 | .0633 | .0027 | -.0579 | -.1183 |
| | .5 | 0 | -.0141 | -.0282 | -.0424 | -.0565 | -.0706 | -.0847 | -.0988 | -.1129 | -.1271 | -.1412 | -.0612 | .0188 | .0988 | .1788 | .2588 | .1788 | .0988 | .0188 | -.0612 | -.1412 |
| | .6 | 0 | -.0118 | -.0237 | -.0355 | -.0474 | -.0592 | -.0711 | -.0829 | -.0948 | -.1066 | -.1183 | -.0579 | .0027 | .0633 | .1239 | .1845 | .2451 | .1456 | .0462 | -.0532 | -.1526 |
| | .7 | 0 | -.0089 | -.0177 | -.0266 | -.0355 | -.0444 | -.0532 | -.0621 | -.0710 | -.0798 | -.0887 | -.0467 | -.0047 | .0374 | .0794 | .1214 | .1634 | .2055 | .0875 | -.0305 | -.1485 |
| | .8 | 0 | -.0056 | -.0112 | -.0169 | -.0225 | -.0281 | -.0337 | -.0394 | -.0450 | -.0506 | -.0562 | -.0310 | -.0059 | .0193 | .0445 | .0696 | .0948 | .1200 | .1452 | .0103 | -.1245 |
| .9 | 0 | -.0025 | -.0050 | -.0076 | -.0101 | -.0126 | -.0151 | -.0177 | -.0202 | -.0227 | -.0252 | -.0143 | -.0035 | .0074 | .0183 | .0292 | .0401 | .0509 | .0618 | .0727 | -.0764 | |
| SPAN 3 | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0011 | .0022 | .0034 | .0045 | .0056 | .0067 | .0078 | .0090 | .0101 | .0112 | .0064 | .0017 | -.0031 | -.0078 | -.0125 | -.0173 | -.0221 | -.0268 | -.0316 | -.0363 |
| | .2 | 0 | .0019 | .0038 | .0056 | .0075 | .0094 | .0113 | .0132 | .0150 | .0169 | .0188 | .0108 | .0028 | -.0052 | -.0132 | -.0212 | -.0292 | -.0372 | -.0452 | -.0532 | -.0612 |
| | .3 | 0 | .0023 | .0047 | .0070 | .0093 | .0117 | .0140 | .0163 | .0186 | .0210 | .0233 | .0134 | .0035 | -.0064 | -.0163 | -.0262 | -.0362 | -.0461 | -.0560 | -.0659 | -.0758 |
| | .4 | 0 | .0025 | .0050 | .0075 | .0100 | .0126 | .0151 | .0176 | .0201 | .0226 | .0251 | .0144 | .0038 | -.0069 | -.0176 | -.0282 | -.0389 | -.0496 | -.0602 | -.0709 | -.0816 |
| | .5 | 0 | .0025 | .0049 | .0074 | .0098 | .0123 | .0147 | .0172 | .0196 | .0221 | .0245 | .0141 | .0037 | -.0067 | -.0172 | -.0276 | -.0380 | -.0484 | -.0588 | -.0692 | -.0797 |
| | .6 | 0 | .0022 | .0044 | .0066 | .0088 | .0110 | .0132 | .0154 | .0176 | .0198 | .0220 | .0126 | .0033 | -.0060 | -.0154 | -.0247 | -.0340 | -.0434 | -.0527 | -.0620 | -.0714 |
| | .7 | 0 | .0018 | .0036 | .0053 | .0071 | .0089 | .0107 | .0125 | .0142 | .0160 | .0178 | .0103 | .0027 | -.0049 | -.0125 | -.0201 | -.0277 | -.0352 | -.0428 | -.0504 | -.0580 |
| | .8 | 0 | .0013 | .0025 | .0038 | .0050 | .0063 | .0075 | .0088 | .0100 | .0113 | .0125 | .0072 | .0019 | -.0035 | -.0088 | -.0141 | -.0195 | -.0248 | -.0301 | -.0355 | -.0408 |
| .9 | 0 | .0007 | .0013 | .0020 | .0026 | .0033 | .0039 | .0046 | .0052 | .0059 | .0065 | .0037 | .0010 | -.0018 | -.0045 | -.0073 | -.0100 | -.0128 | -.0155 | -.0183 | -.0210 | |
| D | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| + Area | 0 | .0413 | .0727 | .0940 | .1053 | .1066 | .0979 | .0793 | .0506 | .0228 | .0163 | .0214 | .0589 | .1182 | .1566 | .1694 | .1566 | .1182 | .0589 | .0214 | .0163 | |
| - Area | 0 | -.0150 | -.0302 | -.0452 | -.0602 | -.0753 | -.0903 | -.1054 | -.1205 | -.1464 | -.2037 | -.0935 | -.0415 | -.0368 | -.0368 | -.0368 | -.0368 | -.0368 | -.0415 | -.0935 | -.2037 | |
| Total Area | 0 | .0263 | .0425 | .0488 | .0451 | .0313 | .0076 | -.0261 | -.0699 | -.1236 | -.1874 | -.0721 | -.0174 | .0814 | .1198 | .1326 | .1198 | .0814 | .0174 | -.0721 | -.1874 | |

TABLE A3.6



| Unit load at | REACTIONS/P | | | | SHEARS/P | | | | | | |
|--------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------|
| | R _A | R _B | R _C | R _D | V _{AB} | V _{BA} | V _{BC} | V _{CB} | V _{CD} | V _{DC} | |
| SPAN 1 | A | 1.0 | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 |
| | .1 | .8790 | .1382 | -.0237 | .0065 | .8790 | -.1210 | .0172 | .0172 | -.0065 | -.0065 |
| | .2 | .7592 | .2741 | -.0458 | .0125 | .7592 | -.2408 | .0333 | .0333 | -.0125 | -.0125 |
| | .3 | .6420 | .4054 | -.0652 | .0178 | .6420 | -.3580 | .0474 | .0474 | -.0178 | -.0178 |
| | .4 | .5286 | .5297 | -.0803 | .0220 | .5286 | -.4714 | .0583 | .0583 | -.0220 | -.0220 |
| | .5 | .4203 | .6448 | -.0896 | .0245 | .4203 | -.5797 | .0651 | .0651 | -.0245 | -.0245 |
| | .6 | .3134 | .7482 | -.0917 | .0251 | .3134 | -.6816 | .0666 | .0666 | -.0251 | -.0251 |
| | .7 | .2242 | .8378 | -.0853 | .0233 | .2242 | -.7758 | .0620 | .0620 | -.0233 | -.0233 |
| | .8 | .1388 | .9112 | -.0688 | .0188 | .1388 | -.8612 | .0500 | -.0500 | -.0188 | -.0188 |
| .9 | .0637 | .9660 | -.0409 | .0112 | .0637 | -.9363 | .0297 | .0297 | -.0112 | -.0112 | |
| SPAN 2 | B | 0 | 1.0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 0 | 0 |
| | .1 | -.0764 | 1.0084 | .0932 | -.0252 | -.0764 | -.0764 | .9320 | -.0680 | .0252 | .0252 |
| | .2 | -.1245 | .9672 | .2135 | -.0562 | -.1245 | -.1245 | .8427 | -.1573 | -.0562 | .0562 |
| | .3 | -.1485 | .8858 | .3514 | -.0887 | -.1485 | -.1485 | .7373 | -.2627 | -.0887 | .0887 |
| | .4 | -.1526 | .7739 | .4972 | -.1185 | -.1526 | -.1526 | .6213 | -.3787 | -.1185 | .1185 |
| | .5 | -.1412 | .6412 | .6412 | -.1412 | -.1412 | -.1412 | .5000 | .5000 | .1412 | .1412 |
| | .6 | -.1185 | .4972 | .7739 | -.1526 | -.1185 | .1185 | .3787 | -.6213 | .1526 | .1526 |
| | .7 | -.0887 | .3514 | .8858 | -.1485 | -.0887 | -.0887 | .2627 | -.7373 | .1485 | .1485 |
| | .8 | -.0562 | .2135 | .9672 | -.1245 | -.0562 | -.0562 | .1573 | -.8427 | .1245 | .1245 |
| .9 | -.0252 | .0932 | 1.0084 | -.0764 | -.0252 | -.0252 | .0680 | -.9320 | .0764 | .0764 | |
| SPAN 3 | C | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | .1 | .0112 | -.0409 | .9660 | .0637 | .0112 | .0112 | -.0297 | -.0297 | .9363 | -.0637 |
| | .2 | .0188 | -.0688 | .9112 | .1388 | .0188 | .0188 | -.0500 | -.0500 | .8612 | -.1388 |
| | .3 | .0233 | -.0853 | .8378 | .2242 | .0233 | .0233 | -.0620 | -.0620 | .7758 | -.2242 |
| | .4 | .0251 | -.0917 | .7482 | .3184 | .0251 | .0251 | -.0666 | -.0666 | .6816 | -.3184 |
| | .5 | .0245 | -.0896 | .6448 | .4203 | .0245 | .0245 | -.0651 | -.0651 | .5797 | -.4203 |
| | .6 | .0220 | -.0803 | .5297 | .5286 | .0220 | .0220 | -.0583 | -.0583 | .4714 | -.5286 |
| | .7 | .0178 | -.0652 | .4054 | .6420 | .0178 | .0178 | -.0474 | -.0474 | .3580 | -.6420 |
| | .8 | .0125 | -.0458 | .2741 | .7592 | .0125 | .0125 | -.0333 | -.0333 | .2408 | -.7592 |
| .9 | .0065 | -.0237 | .1382 | .8790 | .0065 | .0065 | -.0172 | -.0172 | .1210 | -.8790 | |
| D | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | -1.0 | |
| + Area | | .4632 | 1.5471 | 1.5471 | .4632 | .4632 | .0163 | .8434 | .0434 | .7037 | .1506 |
| - Area | | -.1506 | -.0597 | -.0597 | -.1506 | -.1506 | -.7037 | -.0434 | -.8434 | -.0163 | -.4632 |
| Total Area | | .3126 | 1.4874 | 1.4874 | .3126 | .3126 | -.6874 | .8000 | -.8000 | .6874 | -.3126 |

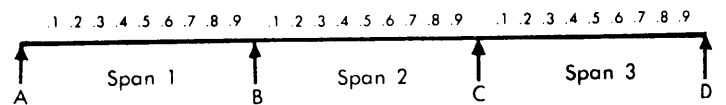
Influence coefficients — Three continuous spans.

L = Length of EXTERIOR spans; length of interior spans = NL.

N=1.6

| Unit load at | | MOMENTS/PL | | | | | | | | | | | | | | | | | | | | |
|--------------|----|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | | SPAN 1 | | | | | | | | | | SPAN 2 | | | | | | | | | | |
| | | A | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | B | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | C |
| SPAN 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0880 | .0759 | .0639 | .0519 | .0398 | .0278 | .0158 | .0037 | -.0083 | -.0204 | -.0177 | -.0150 | -.0123 | -.0096 | -.0070 | -.0043 | -.0016 | .0011 | .0037 | .0064 |
| | .2 | 0 | .0761 | .1521 | .1282 | .1042 | .0803 | .0563 | .0324 | .0084 | -.0155 | -.0395 | -.0343 | -.0291 | -.0239 | -.0187 | -.0135 | -.0083 | -.0031 | .0020 | .0072 | .0124 |
| | .3 | 0 | .0644 | .1288 | .1932 | .1576 | .1219 | .0863 | .0507 | .0151 | -.0205 | -.0561 | -.0487 | -.0414 | -.0340 | -.0266 | -.0192 | -.0118 | -.0045 | .0029 | .0103 | .0177 |
| | .4 | 0 | .0531 | .1062 | .1593 | .2124 | .1655 | .1186 | .0717 | .0247 | -.0222 | -.0691 | -.0600 | -.0509 | -.0418 | -.0327 | -.0237 | -.0146 | -.0055 | .0036 | .0127 | .0217 |
| | .5 | 0 | .0423 | .0846 | .1269 | .1692 | .2115 | .1537 | .0960 | .0383 | -.0194 | -.0771 | -.0669 | -.0563 | -.0467 | -.0365 | -.0264 | -.0163 | -.0061 | .0040 | .0141 | .0243 |
| | .6 | 0 | .0321 | .0642 | .0963 | .1284 | .1605 | .1926 | .1247 | .0569 | -.0110 | -.0789 | -.0686 | -.0582 | -.0478 | -.0374 | -.0270 | -.0167 | -.0063 | .0041 | .0145 | .0248 |
| | .7 | 0 | .0227 | .0453 | .0680 | .0906 | .1133 | .1360 | .1586 | .0813 | .0040 | -.0734 | -.0637 | -.0541 | -.0444 | -.0348 | -.0251 | -.0155 | -.0058 | .0038 | .0135 | .0231 |
| | .8 | 0 | .0141 | .0282 | .0422 | .0563 | .0704 | .0845 | .0986 | .1126 | .0267 | -.0592 | -.0514 | -.0436 | -.0358 | -.0281 | -.0203 | -.0125 | -.0047 | .0031 | .0109 | .0186 |
| .9 | 0 | .0065 | .0130 | .0195 | .0259 | .0324 | .0389 | .0454 | .0519 | .0584 | -.0352 | -.0305 | -.0259 | -.0213 | -.0167 | -.0120 | -.0074 | -.0028 | .0018 | .0064 | .0111 | |
| SPAN 2 | B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | -.0083 | -.0166 | -.0249 | -.0332 | -.0415 | -.0498 | -.0581 | -.0665 | -.0748 | -.0831 | .0756 | .0642 | .0528 | .0414 | .0300 | .0187 | .0073 | -.0041 | -.0155 | -.0268 |
| | .2 | 0 | -.0135 | -.0270 | -.0406 | -.0541 | -.0676 | -.0811 | -.0946 | -.1081 | -.1217 | -.1352 | .0083 | .1518 | .1253 | .0988 | .0723 | .0458 | .0193 | -.0072 | -.0337 | -.0602 |
| | .3 | 0 | -.0161 | -.0322 | -.0483 | -.0644 | -.0805 | -.0966 | -.1127 | -.1288 | -.1449 | -.1610 | -.0355 | .0901 | .2157 | .1712 | .1268 | .0823 | .0379 | -.0065 | -.0510 | -.0954 |
| | .4 | 0 | -.0165 | -.0331 | -.0496 | -.0661 | -.0826 | -.0992 | -.1157 | -.1322 | -.1488 | -.1653 | -.0595 | .0462 | .1520 | .2577 | .1935 | .1292 | .0650 | .0007 | -.0635 | -.1278 |
| | .5 | 0 | -.0153 | -.0305 | -.0458 | -.0611 | -.0763 | -.0916 | -.1068 | -.1221 | -.1374 | -.1526 | -.0676 | .0174 | .1024 | .1874 | .2724 | .1874 | .1024 | .0174 | -.0676 | -.1526 |
| | .6 | 0 | -.0128 | -.0256 | -.0383 | -.0511 | -.0639 | -.0767 | -.0895 | -.1022 | -.1150 | -.1278 | -.0635 | .0007 | .0650 | .1292 | .1935 | .2577 | .1520 | .0462 | -.0595 | -.1653 |
| | .7 | 0 | -.0095 | -.0191 | -.0286 | -.0382 | -.0477 | -.0572 | -.0668 | -.0763 | -.0859 | -.0954 | -.0510 | -.0065 | .0379 | .0823 | .1268 | .1712 | .2157 | .0901 | -.0355 | -.1610 |
| | .8 | 0 | -.0060 | -.0120 | -.0181 | -.0241 | -.0301 | -.0361 | -.0421 | -.0482 | -.0542 | -.0602 | -.0337 | -.0072 | .0193 | .0458 | .0723 | .0988 | .1253 | .1518 | .0083 | -.1352 |
| .9 | 0 | -.0027 | -.0054 | -.0080 | -.0107 | -.0134 | -.0161 | -.0188 | -.0215 | -.0241 | -.0268 | -.0155 | -.0041 | .0073 | .0187 | .0300 | .0414 | .0528 | .0642 | .0756 | -.0831 | |
| SPAN 3 | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0011 | .0022 | .0033 | .0044 | .0056 | .0067 | .0078 | .0089 | .0100 | .0111 | .0064 | .0018 | -.0028 | -.0074 | -.0120 | -.0167 | -.0213 | -.0259 | -.0305 | -.0352 |
| | .2 | 0 | .0019 | .0037 | .0056 | .0074 | .0093 | .0112 | .0130 | .0149 | .0167 | .0186 | .0109 | .0031 | -.0047 | -.0125 | -.0203 | -.0281 | -.0358 | -.0436 | -.0514 | -.0592 |
| | .3 | 0 | .0023 | .0046 | .0069 | .0092 | .0116 | .0139 | .0162 | .0185 | .0208 | .0231 | .0135 | .0038 | -.0058 | -.0155 | -.0251 | -.0348 | -.0444 | -.0541 | -.0637 | -.0734 |
| | .4 | 0 | .0025 | .0050 | .0074 | .0099 | .0124 | .0149 | .0174 | .0198 | .0223 | .0248 | .0145 | .0041 | -.0063 | -.0167 | -.0270 | -.0374 | -.0478 | -.0582 | -.0686 | -.0789 |
| | .5 | 0 | .0024 | .0049 | .0073 | .0097 | .0122 | .0146 | .0170 | .0194 | .0219 | .0243 | .0141 | .0040 | -.0061 | -.0163 | -.0264 | -.0365 | -.0467 | -.0568 | -.0669 | -.0771 |
| | .6 | 0 | .0022 | .0043 | .0065 | .0087 | .0109 | .0130 | .0152 | .0174 | .0195 | .0217 | .0127 | .0036 | -.0055 | -.0146 | -.0237 | -.0327 | -.0418 | -.0509 | -.0600 | -.0691 |
| | .7 | 0 | .0018 | .0035 | .0053 | .0071 | .0089 | .0106 | .0124 | .0142 | .0159 | .0177 | .0103 | .0029 | -.0045 | -.0118 | -.0192 | -.0266 | -.0340 | -.0414 | -.0487 | -.0561 |
| | .8 | 0 | .0012 | .0025 | .0037 | .0050 | .0062 | .0074 | .0087 | .0099 | .0112 | .0124 | .0072 | .0020 | -.0031 | -.0083 | -.0135 | -.0187 | -.0239 | -.0291 | -.0343 | -.0395 |
| .9 | 0 | .0006 | .0013 | .0019 | .0026 | .0032 | .0038 | .0045 | .0051 | .0058 | .0064 | .0037 | .0011 | -.0016 | -.0043 | -.0070 | -.0096 | -.0123 | -.0150 | -.0177 | -.0204 | |
| D | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| + Area | | 0 | .0415 | .0729 | .0945 | .1060 | .1074 | .0989 | .0804 | .0518 | .0231 | .0162 | .0224 | .0641 | .1304 | .1738 | .1882 | .1738 | .1304 | .0641 | .0224 | .0162 |
| - Area | | 0 | -.0173 | -.0345 | -.0520 | -.0693 | -.0865 | -.1038 | -.1211 | -.1384 | -.1555 | -.2244 | -.1006 | -.0411 | -.0352 | -.0352 | -.0352 | -.0352 | -.0352 | -.0411 | -.1006 | -.2244 |
| Total Area | | 0 | .0242 | .0384 | .0425 | .0367 | .0209 | -.0049 | -.0407 | -.0866 | -.1424 | -.2082 | -.0782 | .0230 | .0952 | .1386 | .1530 | .1386 | .0952 | .0230 | -.0782 | -.2082 |

TABLE A3.7



| Unit load at | REACTIONS/P | | | | SHEARS/P | | | | | | |
|--------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------|
| | R _A | R _B | R _C | R _D | V _{AB} | V _{BA} | V _{BC} | V _{CB} | V _{CD} | V _{DC} | |
| SPAN 1 | A | 1.0 | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 |
| | .1 | .8796 | .1361 | -.0221 | .0064 | .8796 | -.1204 | .0157 | .0157 | -.0064 | -.0064 |
| | .2 | .7605 | .2700 | -.0429 | .0124 | .7605 | -.2395 | .0305 | .0305 | -.0124 | -.0124 |
| | .3 | .6439 | .3995 | -.0611 | .0177 | .6439 | -.3561 | .0434 | .0434 | -.0177 | -.0177 |
| | .4 | .5309 | .5225 | -.0751 | .0217 | .5309 | -.4691 | .0534 | .0534 | -.0217 | -.0217 |
| | .5 | .4229 | .6367 | -.0839 | .0243 | .4229 | -.5771 | .0596 | .0596 | -.0243 | -.0243 |
| | .6 | .3211 | .7400 | -.0859 | .0248 | .3211 | -.6789 | .0611 | .0611 | -.0248 | -.0248 |
| | .7 | .2266 | .8301 | -.0798 | .0231 | .2266 | -.7734 | .0567 | .0567 | -.0231 | -.0231 |
| | .8 | .1408 | .9050 | -.0644 | .0186 | .1408 | -.8592 | .0458 | .0458 | -.0186 | -.0186 |
| .9 | .0648 | .9623 | -.0382 | .0111 | .0648 | -.9352 | .0271 | .0271 | -.0111 | -.0111 | |
| SPAN 2 | B | 0 | 1.0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 0 | 0 |
| | .1 | -.0831 | 1.0161 | .0938 | -.0268 | -.0831 | -.0831 | .9330 | -.0670 | .0268 | .0268 |
| | .2 | -.1352 | .9793 | .2161 | -.0602 | -.1352 | -.1352 | .8441 | -.1559 | .0602 | .0602 |
| | .3 | -.1610 | .8996 | .3568 | -.0954 | -.1610 | -.1610 | .7386 | -.2614 | .0954 | .0954 |
| | .4 | -.1653 | .7874 | .5057 | -.1278 | -.1653 | -.1653 | .6221 | -.3779 | .1278 | .1278 |
| | .5 | -.1526 | .6526 | .6526 | -.1526 | -.1526 | -.1526 | .5000 | -.5000 | .1526 | .1526 |
| | .6 | -.1278 | .5057 | .7874 | -.1653 | -.1278 | -.1278 | .3779 | -.6221 | .1653 | .1653 |
| | .7 | -.0954 | .3568 | .8996 | -.1610 | -.0954 | -.0954 | .2614 | -.7386 | .1610 | .1610 |
| | .8 | -.0602 | .2161 | .9793 | -.1352 | -.0602 | -.0602 | .1559 | -.8441 | .1352 | .1352 |
| .9 | -.0268 | .0938 | 1.0161 | -.0831 | -.0268 | -.0268 | .0670 | -.9330 | .0831 | .0831 | |
| SPAN 3 | C | 0 | 0 | 1.0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 0 |
| | .1 | .0111 | -.0382 | .9623 | .0648 | .0111 | .0111 | -.0271 | -.0271 | .9352 | -.0648 |
| | .2 | .0186 | -.0644 | .9050 | .1408 | .0186 | .0186 | -.0458 | -.0458 | .8592 | -.1408 |
| | .3 | .0231 | -.0798 | .8301 | .2266 | .0231 | .0231 | -.0567 | -.0567 | .7734 | -.2266 |
| | .4 | .0248 | -.0859 | .7400 | .3211 | .0248 | .0248 | -.0611 | -.0611 | .6789 | -.3211 |
| | .5 | .0243 | -.0839 | .6367 | .4229 | .0243 | .0243 | -.0596 | -.0596 | .5771 | -.4229 |
| | .6 | .0217 | -.0751 | .5225 | .5309 | .0217 | .0217 | -.0534 | -.0534 | .4691 | -.5309 |
| | .7 | .0177 | -.0611 | .3995 | .6439 | .0177 | .0177 | -.0434 | -.0434 | .3561 | -.6439 |
| | .8 | .0124 | -.0429 | .2700 | .7605 | .0124 | .0124 | -.0305 | -.0305 | .2395 | -.7605 |
| .9 | .0064 | -.0221 | .1361 | .8796 | .0064 | .0064 | -.0157 | -.0157 | .1204 | -.8796 | |
| D | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | -1.0 | |
| + Area | | .4648 | 1.6141 | 1.6141 | .4648 | .4648 | .0162 | .8897 | .0397 | .7244 | .1730 |
| - Area | | -.1730 | -.0559 | -.0559 | -.1730 | -.1730 | -.7244 | -.0397 | -.8897 | -.0162 | -.4648 |
| Total Area | | .2918 | 1.5582 | 1.5582 | .2918 | .2918 | -.7082 | .8500 | -.8500 | .7082 | -.2918 |

Influence coefficients — Three continuous spans.

L = Length of EXTERIOR spans; length of interior spans = NL.

N=1.7

| Unit load at | REACTIONS/P | | | | | SHEARS/P | | | | | | | | |
|--------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|
| | R _A | R _B | R _C | R _D | R _E | V _{AB} | V _{BA} | V _{BC} | V _{CB} | V _{CD} | V _{DC} | V _{DE} | V _{ED} | |
| SPAN 1 | A | 1.0 | 0 | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | .8735 | .1601 | -.0424 | .0106 | -.0018 | .8735 | -.1265 | .0336 | .0336 | -.0088 | -.0088 | .0018 | |
| | .2 | .7486 | .3166 | -.0823 | .0206 | -.0034 | .7486 | -.2514 | .0651 | .0651 | -.0171 | -.0171 | .0034 | |
| | .3 | .6269 | .4658 | -.1170 | .0292 | -.0049 | .6269 | -.3731 | .0926 | .0926 | -.0244 | -.0244 | .0049 | |
| | .4 | .5100 | .6040 | -.1440 | .0360 | -.0060 | .5100 | -.4900 | .1140 | .1140 | -.0300 | -.0300 | .0060 | |
| | .5 | .3996 | .7277 | -.1607 | .0402 | -.0067 | .3996 | -.6004 | .1272 | .1272 | -.0335 | -.0335 | .0067 | |
| | .6 | .2971 | .8331 | -.1646 | .0411 | -.0069 | .2971 | -.7029 | .1303 | .1303 | -.0343 | -.0343 | .0069 | |
| | .7 | .2044 | .9168 | -.1530 | .0383 | -.0064 | .2044 | -.7956 | .1211 | .1211 | -.0319 | -.0319 | .0064 | |
| | .8 | .1229 | .9749 | -.1234 | .0309 | -.0051 | .1229 | -.8771 | .0977 | .0977 | -.0257 | -.0257 | .0051 | |
| .9 | .0542 | 1.0038 | -.0733 | .0183 | -.0031 | .0542 | -.9458 | .0580 | .0580 | -.0153 | -.0153 | .0031 | | |
| SPAN 2 | B | 0 | 1.0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 0 | 0 | 0 | | |
| | .1 | -.0387 | .9614 | .0974 | -.0241 | .0040 | -.0387 | -.0387 | .9227 | -.0773 | .0201 | .0201 | -.0040 | |
| | .2 | -.0634 | .8926 | .2137 | -.0514 | .0086 | -.0634 | -.0634 | .8291 | -.1709 | .0429 | .0429 | -.0086 | |
| | .3 | -.0761 | .7998 | .3420 | -.0788 | .0131 | -.0761 | -.0761 | .7236 | -.2764 | .0656 | .0656 | -.0131 | |
| | .4 | -.0789 | .6891 | .4754 | -.1029 | .0171 | -.0789 | -.0789 | .6103 | -.3897 | .0857 | .0857 | -.0171 | |
| | .5 | -.0737 | .5670 | .6071 | -.1205 | .0201 | -.0737 | -.0737 | .4933 | -.5067 | .1004 | .1004 | -.0201 | |
| | .6 | -.0626 | .4394 | .7303 | -.1286 | .0214 | -.0626 | -.0626 | .3769 | -.6231 | .1071 | .1071 | -.0214 | |
| | .7 | -.0476 | .3128 | .8380 | -.1238 | .0206 | -.0476 | -.0476 | .2651 | -.7349 | .1031 | .1031 | -.0206 | |
| | .8 | -.0309 | .1931 | .9234 | -.1029 | .0171 | -.0309 | -.0309 | .1623 | -.8377 | .0857 | .0857 | -.0171 | |
| .9 | -.0143 | .0868 | .9797 | -.0627 | .0104 | -.0143 | -.0143 | .0725 | -.9275 | .0522 | .0522 | -.0104 | | |
| SPAN 3 | C | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 0 | | |
| | .1 | .0104 | -.0627 | .9797 | .0868 | -.0143 | .0104 | .0104 | -.0522 | -.0522 | .9275 | -.0725 | .0143 | |
| | .2 | .0171 | -.1029 | .9234 | .1931 | -.0309 | .0171 | .0171 | -.0857 | -.0857 | .8377 | -.1623 | .0309 | |
| | .3 | .0206 | -.1238 | .8380 | .3128 | -.0476 | .0206 | .0206 | -.1031 | -.1031 | .7349 | -.2651 | .0476 | |
| | .4 | .0214 | -.1286 | .7303 | .4394 | -.0626 | .0214 | .0214 | -.1071 | -.1071 | .6231 | -.3769 | .0626 | |
| | .5 | .0201 | -.1205 | .6071 | .5670 | -.0737 | .0201 | .0201 | -.1004 | -.1004 | .5067 | -.4933 | .0737 | |
| | .6 | .0171 | -.1029 | .4754 | .6891 | -.0789 | .0171 | .0171 | -.0857 | -.0857 | .3897 | -.6103 | .0789 | |
| | .7 | .0131 | -.0788 | .3420 | .7998 | -.0761 | .0131 | .0131 | -.0656 | -.0656 | .2764 | -.7236 | .0761 | |
| | .8 | .0086 | -.0514 | .2137 | .8926 | -.0634 | .0086 | .0086 | -.0429 | -.0429 | .1709 | -.8291 | .0634 | |
| .9 | .0040 | -.0241 | .0974 | .9614 | -.0387 | .0040 | .0040 | -.0201 | -.0201 | .0773 | -.9227 | .0387 | | |
| SPAN 4 | D | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | -1.0 | 0 | | |
| | .1 | -.0031 | .0183 | -.0733 | 1.0038 | .0542 | -.0031 | -.0031 | .0153 | .0153 | -.0580 | -.0580 | .9458 | |
| | .2 | -.0051 | .0309 | -.1234 | .9749 | .1229 | -.0051 | -.0051 | .0257 | .0257 | -.0977 | -.0977 | .8771 | |
| | .3 | -.0064 | .0383 | -.1530 | .9168 | .2044 | -.0064 | -.0064 | .0319 | .0319 | -.1211 | -.1211 | .7956 | |
| | .4 | -.0069 | .0411 | -.1646 | .8331 | .2971 | -.0069 | -.0069 | .0343 | .0343 | -.1303 | -.1303 | .7029 | |
| | .5 | -.0067 | .0402 | -.1607 | .7277 | .3996 | -.0067 | -.0067 | .0335 | .0335 | -.1272 | -.1272 | .6004 | |
| | .6 | -.0060 | .0360 | -.1440 | .6040 | .5100 | -.0060 | -.0060 | .0300 | .0300 | -.1140 | -.1140 | .4900 | |
| | .7 | -.0049 | .0292 | -.1170 | .4658 | .6269 | -.0049 | -.0049 | .0244 | .0244 | -.0926 | -.0926 | .3731 | |
| | .8 | -.0034 | .0206 | -.0823 | .3166 | .7486 | -.0034 | -.0034 | .0171 | .0171 | -.0651 | -.0651 | .2514 | |
| .9 | -.0018 | .0106 | -.0424 | .1601 | .8735 | -.0018 | -.0018 | .0088 | .0088 | -.0336 | -.0336 | .1265 | | |
| E | 0 | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | -1.0 | | |
| + Area | .4464 | 1.2232 | 1.1429 | 1.2232 | .4464 | .4464 | .0134 | .6027 | .1071 | .5714 | .0670 | .6205 | .0536 | |
| - Area | -.0536 | -.0804 | -.2143 | -.0804 | -.0536 | -.0536 | -.6205 | -.0670 | -.5714 | -.1071 | -.6027 | -.0134 | -.4464 | |
| Total Area | .3928 | 1.1428 | .9286 | 1.1428 | .3928 | .3928 | -.6071 | .5357 | -.4643 | .4643 | -.5357 | .6071 | -.3928 | |

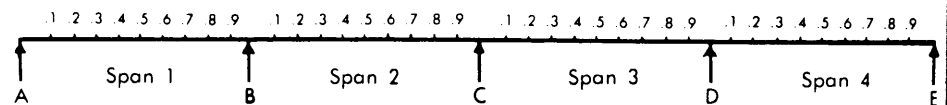
Influence coefficients — Four continuous spans.

L = Length of EXTERIOR spans; length of interior spans = NL.

N=1.0

| Unit load at | MOMENTS/PL | | | | | | | | | | | | | | | | | | | | |
|--------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | SPAN 1 | | | | | | | | | | | SPAN 2 | | | | | | | | | |
| | A | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | B | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | C |
| SPAN 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | .1 | 0 | .0875 | .0749 | .0624 | .0499 | .0373 | .0248 | .0123 | -.0003 | -.0128 | -.0253 | -.0221 | -.0189 | -.0157 | -.0125 | -.0093 | -.0061 | -.0029 | .0004 | .0036 |
| | .2 | 0 | .0751 | .1502 | .1253 | .1003 | .0754 | .0505 | .0256 | .0007 | -.0242 | -.0492 | -.0429 | -.0367 | -.0305 | -.0242 | -.0180 | -.0118 | -.0055 | .0007 | .0069 |
| | .3 | 0 | .0630 | .1260 | .1890 | .1520 | .1151 | .0781 | .0411 | .0041 | -.0329 | -.0699 | -.0610 | -.0522 | -.0433 | -.0345 | -.0256 | -.0167 | -.0079 | .0010 | .0098 |
| | .4 | 0 | .0514 | .1028 | .1542 | .2056 | .1570 | .1084 | .0598 | .0112 | -.0374 | -.0860 | -.0751 | -.0642 | -.0533 | -.0424 | -.0315 | -.0206 | -.0097 | .0012 | .0121 |
| | .5 | 0 | .0404 | .0808 | .1212 | .1616 | .2020 | .1424 | .0828 | .0232 | -.0364 | -.0960 | -.0838 | -.0717 | -.0595 | -.0473 | -.0352 | -.0230 | -.0108 | .0013 | .0135 |
| | .6 | 0 | .0302 | .0603 | .0905 | .1207 | .1508 | .1810 | .1112 | .0413 | -.0285 | -.0983 | -.0859 | -.0734 | -.0609 | -.0485 | -.0360 | -.0235 | -.0111 | .0014 | .0138 |
| | .7 | 0 | .0209 | .0417 | .0626 | .0834 | .1043 | .1252 | .1460 | .0669 | -.0123 | -.0914 | -.0798 | -.0682 | -.0566 | -.0451 | -.0335 | -.0219 | -.0103 | .0013 | .0129 |
| | .8 | 0 | .0126 | .0253 | .0379 | .0505 | .0631 | .0758 | .0884 | .1010 | .0136 | -.0737 | -.0644 | -.0550 | -.0457 | -.0364 | -.0270 | -.0177 | .0083 | -.0010 | .0104 |
| | .9 | 0 | .0056 | .0112 | .0169 | .0225 | .0281 | .0337 | .0394 | .0450 | .0506 | -.0438 | -.0382 | -.0327 | -.0271 | -.0216 | -.0160 | -.0105 | -.0049 | .0066 | .0062 |
| SPAN 2 | B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | .1 | 0 | -.0045 | -.0090 | -.0134 | -.0179 | -.0224 | -.0269 | -.0313 | -.0358 | -.0403 | -.0448 | .0570 | .0488 | .0405 | .0323 | .0240 | .0158 | .0076 | -.0007 | -.0089 |
| | .2 | 0 | -.0073 | -.0147 | -.0220 | -.0293 | -.0367 | -.0440 | -.0513 | -.0586 | -.0660 | -.0733 | .0183 | .1100 | .0916 | .0733 | .0549 | .0365 | .0182 | -.0002 | -.0185 |
| | .3 | 0 | -.0088 | -.0176 | -.0264 | -.0352 | -.0440 | -.0528 | -.0616 | -.0704 | -.0792 | -.0880 | -.0079 | .0723 | .1524 | .1225 | .0926 | .0627 | .0328 | .0030 | -.0269 |
| | .4 | 0 | -.0091 | -.0182 | -.0273 | -.0364 | -.0456 | -.0547 | -.0638 | -.0729 | -.0820 | -.0911 | -.0235 | .0442 | .1119 | .1795 | .1372 | .0949 | .0525 | .0102 | -.0322 |
| | .5 | 0 | -.0085 | -.0170 | -.0255 | -.0340 | -.0425 | -.0511 | -.0596 | -.0681 | -.0766 | -.0851 | -.0303 | .0244 | .0792 | .1339 | .1887 | .1334 | .0782 | .0229 | -.0323 |
| | .6 | 0 | -.0072 | -.0145 | -.0217 | -.0289 | -.0361 | -.0434 | -.0506 | -.0578 | -.0650 | -.0723 | -.0304 | .0115 | .0533 | .0952 | .1370 | .1789 | .1108 | .0426 | -.0255 |
| | .7 | 0 | -.0055 | -.0110 | -.0165 | -.0220 | -.0275 | -.0330 | -.0385 | -.0440 | -.0495 | -.0550 | -.0255 | .0334 | .0334 | .0629 | .0923 | .1218 | .1513 | .0707 | -.0098 |
| | .8 | 0 | -.0036 | -.0071 | -.0107 | -.0142 | -.0178 | -.0214 | -.0249 | -.0285 | -.0321 | -.0356 | -.0176 | .0005 | .0185 | .0365 | .0546 | .0726 | .0907 | .1087 | -.0167 |
| | .9 | 0 | -.0016 | -.0033 | -.0049 | -.0066 | -.0082 | -.0099 | -.0115 | -.0132 | -.0148 | -.0165 | -.0084 | -.0004 | .0077 | .0157 | .0238 | .0319 | .0399 | .0480 | -.0560 |
| SPAN 3 | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | .1 | 0 | .0012 | .0024 | .0036 | .0048 | .0060 | .0072 | .0084 | .0096 | .0108 | .0120 | .0062 | .0004 | -.0054 | -.0111 | -.0169 | -.0227 | -.0285 | -.0343 | -.0401 |
| | .2 | 0 | .0020 | .0039 | .0059 | .0079 | .0099 | .0118 | .0138 | .0158 | .0177 | .0197 | .0102 | .0007 | -.0088 | -.0183 | -.0278 | -.0373 | -.0467 | -.0562 | -.0657 |
| | .3 | 0 | .0024 | .0047 | .0071 | .0095 | .0118 | .0142 | .0166 | .0189 | .0213 | .0237 | .0123 | .0009 | -.0105 | -.0219 | -.0333 | -.0447 | -.0561 | -.0675 | -.0789 |
| | .4 | 0 | .0025 | .0049 | .0074 | .0098 | .0123 | .0147 | .0172 | .0196 | .0221 | .0245 | .0127 | .0009 | -.0109 | -.0227 | -.0346 | -.0464 | -.0582 | -.0700 | -.0818 |
| | .5 | 0 | .0023 | .0046 | .0069 | .0092 | .0115 | .0138 | .0161 | .0184 | .0206 | .0229 | .0119 | .0008 | -.0102 | -.0213 | -.0323 | -.0434 | -.0544 | -.0655 | -.0765 |
| | .6 | 0 | .0020 | .0039 | .0059 | .0078 | .0098 | .0117 | .0137 | .0156 | .0176 | .0195 | .0101 | .0007 | -.0087 | -.0181 | -.0275 | -.0369 | -.0463 | -.0557 | -.0651 |
| | .7 | 0 | .0015 | .0030 | .0045 | .0060 | .0074 | .0089 | .0104 | .0119 | .0134 | .0149 | .0077 | .0005 | -.0066 | -.0138 | -.0210 | -.0281 | -.0353 | -.0425 | -.0496 |
| | .8 | 0 | .0010 | .0019 | .0029 | .0039 | .0048 | .0058 | .0068 | .0077 | .0087 | .0097 | .0050 | .0004 | -.0043 | -.0090 | -.0136 | -.0183 | -.0229 | -.0276 | -.0322 |
| | .9 | 0 | .0004 | .0009 | .0013 | .0018 | .0022 | .0027 | .0031 | .0036 | .0040 | .0045 | .0023 | .0002 | -.0020 | -.0042 | -.0063 | -.0085 | -.0107 | -.0128 | -.0150 |
| SPAN 4 | D | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | .1 | 0 | -.0003 | -.0006 | -.0009 | -.0012 | -.0015 | -.0018 | -.0021 | -.0025 | -.0028 | -.0031 | -.0016 | -.0001 | .0014 | .0028 | .0043 | .0058 | .0073 | .0088 | .0102 |
| | .2 | 0 | -.0005 | -.0010 | -.0015 | -.0021 | -.0026 | -.0031 | -.0036 | -.0041 | -.0046 | -.0052 | -.0027 | -.0002 | .0023 | .0048 | .0073 | .0098 | .0123 | .0147 | .0172 |
| | .3 | 0 | -.0006 | -.0013 | -.0019 | -.0026 | -.0032 | -.0038 | -.0045 | -.0051 | -.0058 | -.0064 | -.0033 | -.0002 | .0029 | .0059 | .0090 | .0121 | .0152 | .0183 | .0214 |
| | .4 | 0 | -.0007 | -.0014 | -.0021 | -.0028 | -.0034 | -.0041 | -.0048 | -.0055 | -.0062 | -.0069 | -.0036 | -.0002 | .0031 | .0064 | .0097 | .0130 | .0163 | .0197 | .0230 |
| | .5 | 0 | -.0007 | -.0013 | -.0020 | -.0027 | -.0034 | -.0040 | -.0047 | -.0054 | -.0061 | -.0067 | -.0035 | -.0002 | .0030 | .0062 | .0095 | .0127 | .0160 | .0192 | .0224 |
| | .6 | 0 | -.0006 | -.0012 | -.0018 | -.0024 | -.0030 | -.0036 | -.0042 | -.0048 | -.0054 | -.0060 | -.0031 | -.0002 | .0027 | .0056 | .0085 | .0114 | .0143 | .0172 | .0201 |
| | .7 | 0 | -.0005 | -.0010 | -.0015 | -.0020 | -.0024 | -.0029 | -.0034 | -.0039 | -.0044 | -.0049 | -.0025 | -.0002 | .0022 | .0045 | .0069 | .0093 | .0116 | .0140 | .0163 |
| | .8 | 0 | -.0003 | -.0007 | -.0010 | -.0014 | -.0017 | -.0021 | -.0024 | -.0028 | -.0031 | -.0034 | -.0018 | -.0001 | .0015 | .0032 | .0049 | .0065 | .0082 | .0098 | .0115 |
| | .9 | 0 | -.0002 | -.0004 | -.0005 | -.0007 | -.0009 | -.0011 | -.0012 | -.0014 | -.0016 | -.0018 | -.0009 | -.0001 | .0008 | .0016 | .0025 | .0034 | .0042 | .0051 | .0059 |
| E | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| + Area | 0 | .0403 | .0706 | .0908 | .1011 | .1014 | .0917 | .0720 | .0423 | .0210 | .0168 | .0164 | .0347 | .0661 | .0862 | .0942 | .0902 | .0740 | .0467 | .0313 | .0343 |
| - Area | 0 | -.0067 | -.0134 | -.0200 | -.0267 | -.0334 | -.0401 | -.0468 | -.0535 | -.0578 | -.1309 | -.0740 | -.0480 | -.0472 | -.0471 | -.0471 | -.0471 | -.0481 | -.0730 | -.1285 | -.1285 |
| Total Area | 0 | .0336 | .0572 | .0708 | .0744 | .0680 | .0516 | .0252 | -.0112 | -.0577 | -.1141 | -.0576 | -.0133 | .0189 | .0391 | .0471 | .0431 | .0269 | -.0014 | -.0417 | -.0942 |

TABLE A4.1



| Unit load at | REACTIONS/P | | | | | SHEARS/P | | | | | | | | |
|--------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------|
| | R _A | R _B | R _C | R _D | R _E | V _{AB} | V _{BA} | V _{BC} | V _{CB} | V _{CD} | V _{DC} | V _{DE} | V _{ED} | |
| SPAN 1 | A | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | .8747 | .1546 | -.0370 | .0096 | -.0018 | .8747 | -.1253 | .0292 | .0292 | -.0078 | -.0078 | .0018 | .0018 |
| | .2 | .7508 | .3058 | -.0717 | .0185 | -.0034 | .7508 | -.2492 | .0566 | .0566 | -.0151 | -.0151 | .0034 | .0034 |
| | .3 | .6301 | .4504 | -.1020 | .0264 | -.0049 | .6301 | -.3699 | .0805 | .0805 | -.0215 | -.0215 | .0049 | .0049 |
| | .4 | .5140 | .5852 | -.1255 | .0324 | -.0060 | .5140 | -.4860 | .0991 | .0991 | -.0264 | -.0264 | .0060 | .0060 |
| | .5 | .4040 | .7066 | -.1401 | .0362 | -.0067 | .4040 | -.5960 | .1106 | .1106 | -.0295 | -.0295 | .0067 | .0067 |
| | .6 | .3017 | .8116 | -.1435 | .0371 | -.0069 | .3017 | -.6983 | .1133 | .1133 | -.0302 | -.0302 | .0069 | .0069 |
| | .7 | .2086 | .8967 | -.1334 | .0345 | -.0064 | .2086 | -.7914 | .1053 | .1053 | -.0281 | -.0281 | .0064 | .0064 |
| | .8 | .1263 | .9587 | -.1076 | .0278 | -.0052 | .1263 | -.8737 | .0850 | .0850 | -.0226 | -.0226 | .0052 | .0052 |
| | .9 | .0562 | .9942 | -.0639 | .0165 | -.0031 | .0562 | -.9438 | .0505 | .0505 | -.0134 | -.0134 | .0031 | .0031 |
| SPAN 2 | B | 0 | 1.0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | -.0448 | .9699 | .0946 | -.0242 | .0045 | -.0448 | -.0448 | .9251 | -.0749 | .0197 | .0197 | -.0045 | -.0045 |
| | .2 | -.0733 | .9064 | .2092 | -.0520 | .0097 | -.0733 | -.0733 | .8331 | -.1669 | .0423 | .0423 | -.0097 | -.0097 |
| | .3 | -.0880 | .8163 | .3368 | -.0800 | .0149 | -.0880 | -.0880 | .7283 | -.2717 | .0652 | .0652 | -.0149 | -.0149 |
| | .4 | -.0911 | .7062 | .4704 | -.1050 | .0195 | -.0911 | -.0911 | .6151 | -.3849 | .0855 | .0855 | -.0195 | -.0195 |
| | .5 | -.0851 | .5828 | .6027 | -.1234 | .0229 | -.0851 | -.0851 | .4977 | -.5023 | .1005 | .1005 | -.0229 | -.0229 |
| | .6 | -.0723 | .4528 | .7269 | -.1320 | .0245 | -.0723 | -.0723 | .3806 | -.6195 | .1075 | .1075 | -.0245 | -.0245 |
| | .7 | -.0550 | .3228 | .8358 | -.1273 | .0237 | -.0550 | -.0550 | .2679 | -.7321 | .1036 | .1036 | -.0237 | -.0237 |
| | .8 | -.0356 | .1996 | .9223 | -.1060 | .0197 | -.0356 | -.0356 | .1640 | -.8360 | .0863 | .0863 | -.0197 | -.0197 |
| | .9 | -.0165 | .0898 | .9794 | -.0647 | .0120 | -.0165 | -.0165 | .0733 | -.9267 | .0527 | .0527 | -.0120 | -.0120 |
| SPAN 3 | C | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 0 | 0 | |
| | .1 | .0120 | -.0647 | .9794 | .0898 | -.0165 | .0120 | .0120 | -.0527 | -.0527 | .9267 | -.0733 | .0165 | .0165 |
| | .2 | .0197 | -.1060 | .9223 | .1996 | -.0356 | .0197 | .0197 | -.0863 | -.0863 | .8360 | -.1640 | .0356 | .0356 |
| | .3 | .0237 | -.1273 | .8358 | .3228 | -.0550 | .0237 | .0237 | -.1036 | -.1036 | .7321 | -.2679 | .0550 | .0550 |
| | .4 | .0245 | -.1320 | .7269 | .4528 | -.0723 | .0245 | .0245 | -.1075 | -.1075 | .6195 | -.3806 | .0723 | .0723 |
| | .5 | .0229 | -.1234 | .6027 | .5828 | -.0851 | .0229 | .0229 | -.1005 | -.1005 | .5023 | -.4977 | .0851 | .0851 |
| | .6 | .0195 | -.1050 | .4704 | .7062 | -.0911 | .0195 | .0195 | -.0855 | -.0855 | .3849 | -.6151 | .0911 | .0911 |
| | .7 | .0149 | -.0800 | .3368 | .8163 | -.0880 | .0149 | .0149 | -.0652 | -.0652 | .2717 | -.7283 | .0880 | .0880 |
| | .8 | .0097 | -.0520 | .2092 | .9064 | -.0733 | .0097 | .0097 | -.0423 | -.0423 | .1669 | -.8331 | .0733 | .0733 |
| | .9 | .0045 | -.0242 | .0946 | .9699 | -.0448 | .0045 | .0045 | -.0197 | -.0197 | .0749 | -.9251 | .0448 | .0448 |
| SPAN 4 | D | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | -1.0 | 0 | 0 | |
| | .1 | -.0031 | .0165 | -.0639 | .9942 | .0562 | -.0031 | -.0031 | .0134 | .0134 | -.0505 | -.0505 | .9438 | -.0562 |
| | .2 | -.0052 | .0278 | -.1076 | .9587 | .1263 | -.0052 | -.0052 | .0226 | .0226 | -.0850 | -.0850 | .8737 | -.1263 |
| | .3 | -.0064 | .0345 | -.1334 | .8967 | .2086 | -.0064 | -.0064 | .0281 | .0281 | -.1053 | -.1053 | .7914 | -.2086 |
| | .4 | -.0069 | .0371 | -.1435 | .8116 | .3017 | -.0069 | -.0069 | .0302 | .0302 | -.1133 | -.1133 | .6983 | -.3017 |
| | .5 | -.0067 | .0362 | -.1401 | .7066 | .4040 | -.0067 | -.0067 | .0295 | .0295 | -.1106 | -.1106 | .5960 | -.4040 |
| | .6 | -.0060 | .0324 | -.1255 | .5852 | .5140 | -.0060 | -.0060 | .0264 | .0264 | -.0991 | -.0991 | .4860 | -.5140 |
| | .7 | -.0049 | .0264 | -.1020 | .4504 | .6301 | -.0049 | -.0049 | .0215 | .0215 | -.0805 | -.0805 | .3699 | -.6301 |
| | .8 | -.0034 | .0185 | -.0717 | .3058 | .7508 | -.0034 | -.0034 | .0151 | .0151 | -.0566 | -.0566 | .2492 | -.7508 |
| | .9 | -.0018 | .0096 | -.0370 | .1546 | .8747 | -.0018 | -.0018 | .0078 | .0078 | -.0292 | -.0292 | .1253 | -.8747 |
| E | 0 | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -1.0 | |
| + Area | .4528 | 1.2726 | 1.2507 | 1.2726 | .4528 | .4528 | .0168 | .6417 | .0934 | .6253 | .0737 | .6309 | .0669 | |
| - Area | -.0669 | -.0905 | -.1868 | -.0905 | -.0669 | -.0669 | -.6309 | -.0737 | -.6253 | -.0934 | -.6417 | -.0168 | -.4528 | |
| Total Area | .3859 | 1.1821 | 1.0639 | 1.1821 | .3859 | .3859 | -.6141 | .5680 | -.5319 | -.5319 | -.5680 | .6141 | -.3859 | |

Influence coefficients — Four continuous spans.

L = Length of EXTERIOR spans; length of interior spans = NL.

N=1.1

| Unit load at | REACTIONS/P | | | | | SHEARS/P | | | | | | | | |
|--------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------|
| | R _A | R _B | R _C | R _D | R _E | V _{AB} | V _{BA} | V _{BC} | V _{CB} | V _{CD} | V _{DC} | V _{DE} | V _{ED} | |
| SPAN 1 | A | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | .8757 | .1499 | -.0326 | .0087 | -.0018 | .8757 | -.1243 | .0257 | .0257 | -.0069 | -.0069 | .0018 | .0018 |
| | .2 | .7529 | .2968 | -.0632 | .0169 | -.0034 | .7529 | -.2471 | .0498 | .0498 | -.0134 | -.0134 | .0034 | .0034 |
| | .3 | .6331 | .4377 | -.0898 | .0239 | -.0049 | .6331 | -.3669 | .0708 | .0708 | -.0190 | -.0190 | .0049 | .0049 |
| | .4 | .5176 | .5695 | -.1105 | .0295 | -.0060 | .5176 | -.4824 | .0871 | .0871 | -.0234 | -.0234 | .0060 | .0060 |
| | .5 | .4080 | .6891 | -.1234 | .0329 | -.0067 | .4080 | -.5920 | .0972 | .0972 | -.0262 | -.0262 | .0067 | .0067 |
| | .6 | .3058 | .7937 | -.1263 | .0337 | -.0069 | .3058 | -.6942 | .0995 | .0995 | -.0268 | -.0268 | .0069 | .0069 |
| | .7 | .2125 | .8801 | -.1174 | .0313 | -.0064 | .2125 | -.7875 | .0925 | .0925 | -.0249 | -.0249 | .0064 | .0064 |
| | .8 | .1294 | .9453 | -.0947 | .0253 | -.0052 | .1294 | -.8706 | .0746 | .0746 | -.0201 | -.0201 | .0052 | .0052 |
| .9 | .0581 | .9863 | -.0563 | .0150 | -.0031 | .0581 | -.9419 | .0443 | .0443 | -.0119 | -.0119 | .0031 | .0031 | |
| SPAN 2 | B | 0 | 1.0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | -.0510 | .9783 | .0919 | -.0242 | .0050 | -.0510 | -.0510 | .9273 | -.0727 | .0193 | .0193 | -.0050 | -.0050 |
| | .2 | -.0835 | .9202 | .2051 | -.0525 | .0107 | -.0835 | -.0835 | .8367 | -.1633 | .0418 | .0418 | -.0107 | -.0107 |
| | .3 | -.1002 | .8329 | .3320 | -.0813 | .0166 | -.1002 | -.1002 | .7327 | -.2673 | .0647 | .0647 | -.0166 | -.0166 |
| | .4 | -.1038 | .7233 | .4657 | -.1071 | .0219 | -.1038 | -.1038 | .6195 | -.3805 | .0852 | .0852 | -.0219 | -.0219 |
| | .5 | -.0969 | .5987 | .5987 | -.1263 | .0258 | -.0969 | -.0969 | .5018 | -.4982 | .1005 | .1005 | -.0258 | -.0258 |
| | .6 | -.0823 | .4662 | .7238 | -.1354 | .0277 | -.0823 | -.0823 | .3839 | -.6161 | .1077 | .1077 | -.0277 | -.0277 |
| | .7 | -.0626 | .3329 | .8337 | -.1309 | .0268 | -.0626 | -.0626 | .2704 | -.7296 | .1041 | .1041 | -.0268 | -.0268 |
| | .8 | -.0405 | .2061 | .9213 | -.1091 | .0223 | -.0405 | -.0405 | .1656 | -.8344 | .0868 | .0868 | -.0223 | -.0223 |
| .9 | -.0188 | .0927 | .9791 | -.0667 | .0136 | -.0188 | -.0188 | .0739 | -.9261 | .0531 | .0531 | -.0136 | -.0136 | |
| SPAN 3 | C | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 0 | 0 | |
| | .1 | .0136 | -.0667 | .9791 | .0927 | -.0188 | .0136 | .0136 | -.0531 | -.0531 | .9261 | -.0739 | .0188 | .0188 |
| | .2 | .0223 | -.1091 | .9213 | .2061 | -.0405 | .0223 | .0223 | -.0868 | -.0868 | .8344 | -.1656 | .0405 | .0405 |
| | .3 | .0268 | -.1309 | .8337 | .3329 | -.0626 | .0268 | .0268 | -.1041 | -.1041 | .7296 | -.2704 | .0626 | .0626 |
| | .4 | .0277 | -.1354 | .7238 | .4662 | -.0823 | .0277 | .0277 | -.1077 | -.1077 | .6161 | -.3839 | .0823 | .0823 |
| | .5 | .0258 | -.1263 | .5987 | .5987 | -.0969 | .0258 | .0258 | -.1005 | -.1005 | .4982 | -.5018 | .0969 | .0969 |
| | .6 | .0219 | -.1071 | .4657 | .7233 | -.1038 | .0219 | .0219 | -.0852 | -.0852 | .3805 | -.6195 | .1038 | .1038 |
| | .7 | .0166 | -.0813 | .3320 | .8329 | -.1002 | .0166 | .0166 | -.0647 | -.0647 | .2673 | -.7327 | .1002 | .1002 |
| | .8 | .0107 | -.0525 | .2051 | .9202 | -.0835 | .0107 | .0107 | -.0418 | -.0418 | .1633 | -.8367 | .0835 | .0835 |
| .9 | .0050 | -.0242 | .0919 | .9783 | -.0510 | .0050 | .0050 | -.0193 | -.0193 | .0727 | -.9273 | .0510 | .0510 | |
| SPAN 4 | D | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | -1.0 | 0 | 0 | |
| | .1 | -.0031 | .0150 | -.0563 | .9863 | .0581 | -.0031 | -.0031 | .0119 | .0119 | -.0443 | -.0443 | .9419 | -.0581 |
| | .2 | -.0052 | .0253 | -.0947 | .9453 | .1294 | -.0052 | -.0052 | .0201 | .0201 | -.0746 | -.0746 | .8706 | -.1294 |
| | .3 | -.0064 | .0313 | -.1174 | .8801 | .2125 | -.0064 | -.0064 | .0249 | .0249 | -.0925 | -.0925 | .7875 | -.2125 |
| | .4 | -.0069 | .0337 | -.1263 | .7937 | .3058 | -.0069 | -.0069 | .0268 | .0268 | -.0995 | -.0995 | .6942 | -.3058 |
| | .5 | -.0067 | .0329 | -.1234 | .6891 | .4080 | -.0067 | -.0067 | .0262 | .0262 | -.0972 | -.0972 | .5920 | -.4080 |
| | .6 | -.0060 | .0295 | -.1105 | .5695 | .5176 | -.0060 | -.0060 | .0234 | .0234 | -.0871 | -.0871 | .4824 | -.5176 |
| | .7 | -.0049 | .0239 | -.0898 | .4377 | .6631 | -.0049 | -.0049 | .0190 | .0190 | -.0708 | -.0708 | .3669 | -.6631 |
| | .8 | -.0034 | .0169 | -.0632 | .2968 | .7529 | -.0034 | -.0034 | .0134 | .0134 | -.0498 | -.0498 | .2471 | -.7529 |
| .9 | -.0018 | .0087 | -.0326 | .1499 | .8757 | -.0018 | -.0018 | .0069 | .0069 | -.0257 | -.0257 | .1243 | -.8757 | |
| E | 0 | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -1.0 | |
| ± Area | .4594 | 1.3270 | 1.3579 | 1.3270 | .4594 | .4594 | .0207 | .6837 | .0822 | .6789 | .0804 | .6433 | .0820 | |
| - Area | -.0820 | -.1011 | -.1645 | -.1011 | -.0820 | -.0820 | -.6433 | -.0804 | -.6789 | -.0822 | -.6837 | -.0207 | -.4594 | |
| Total Area | .3774 | 1.2259 | 1.1934 | 1.2259 | .3774 | .3774 | -.6226 | .6033 | -.5967 | .5967 | -.6033 | .6226 | -.3774 | |

Influence coefficients — Four continuous spans.

L = Length of EXTERIOR spans; length of interior spans = NL.

N=1.2

| Unit load at | REACTIONS/P | | | | | SHEARS/P | | | | | | | | |
|--------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------|
| | R _A | R _B | R _C | R _D | R _E | V _{AB} | V _{BA} | V _{BC} | V _{CB} | V _{CD} | V _{DC} | V _{DE} | V _{ED} | |
| SPAN 1 | A | 1.0 | 0 | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | .8767 | .1460 | -.0289 | .0079 | -.0018 | .8767 | -.1233 | .0227 | .0227 | -.0062 | -.0062 | .0018 | .0018 |
| | .2 | .7548 | .2893 | -.0561 | .0154 | -.0034 | .7548 | -.2452 | .0441 | .0441 | -.0120 | -.0120 | .0034 | .0034 |
| | .3 | .6358 | .4269 | -.0797 | .0219 | -.0049 | .6358 | -.3642 | .0627 | .0627 | -.0170 | -.0170 | .0049 | .0049 |
| | .4 | .5209 | .5562 | -.0981 | .0270 | -.0060 | .5209 | -.4791 | .0772 | .0772 | -.0210 | -.0210 | .0060 | .0060 |
| | .5 | .4118 | .6744 | -.1095 | .0301 | -.0067 | .4118 | -.5882 | .0861 | .0861 | -.0234 | -.0234 | .0067 | .0067 |
| | .6 | .3097 | .7785 | -.1122 | .0308 | -.0069 | .3097 | -.6903 | .0882 | .0882 | -.0240 | -.0240 | .0069 | .0069 |
| | .7 | .2160 | .8660 | -.1043 | .0287 | -.0064 | .2160 | -.7840 | .0820 | .0820 | -.0223 | -.0223 | .0064 | .0064 |
| | .8 | .1322 | .9339 | -.0841 | .0231 | -.0052 | .1322 | -.8678 | .0661 | .0661 | -.0180 | -.0180 | .0052 | .0052 |
| .9 | .0598 | .9795 | -.0500 | .0137 | -.0031 | .0598 | -.9402 | .0393 | .0393 | -.0107 | -.0107 | .0031 | .0031 | |
| SPAN 2 | B | 0 | 1.0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 1.0 | 0 | 0 | 0 | |
| | .1 | -.0574 | .9868 | .0895 | -.0243 | .0054 | -.0574 | -.0574 | .9294 | -.0706 | .0189 | .0189 | -.0054 | -.0054 |
| | .2 | -.0940 | .9341 | .2012 | -.0531 | .0118 | -.0940 | -.0940 | .8401 | -.1599 | .0413 | .0413 | -.0118 | -.0118 |
| | .3 | -.1127 | .8494 | .3276 | -.0827 | .0184 | -.1127 | -.1127 | .7366 | -.2634 | .0643 | .0643 | -.0184 | -.0184 |
| | .4 | -.1167 | .7403 | .4614 | -.1093 | .0243 | -.1167 | -.1167 | .6236 | -.3764 | .0849 | .0849 | -.0243 | -.0243 |
| | .5 | -.1090 | .6145 | .5949 | -.1292 | .0288 | -.1090 | -.1090 | .5055 | -.4945 | .1005 | .1005 | -.0288 | -.0288 |
| | .6 | -.0925 | .4795 | .7209 | -.1389 | .0309 | -.0925 | -.0925 | .3870 | -.6130 | .1079 | .1079 | -.0309 | -.0309 |
| | .7 | -.0704 | .3430 | .8318 | -.1344 | .0299 | -.0704 | -.0704 | .2727 | -.7273 | .1045 | .1045 | -.0299 | -.0299 |
| | .8 | -.0455 | .2125 | .9203 | -.1123 | .0250 | -.0455 | -.0455 | .1670 | -.8330 | .0873 | .0873 | -.0250 | -.0250 |
| .9 | -.0211 | .0956 | .9788 | -.0687 | .0153 | -.0211 | -.0211 | .0746 | -.9254 | .0534 | .0534 | -.0153 | -.0153 | |
| SPAN 3 | C | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 1.0 | 0 | |
| | .1 | .0153 | -.0687 | .9788 | .0956 | -.0211 | .0153 | .0153 | -.0534 | -.0534 | .9254 | -.0746 | .0211 | .0211 |
| | .2 | .0250 | -.1123 | .9203 | .2125 | -.0455 | .0250 | .0250 | -.0873 | -.0873 | .8330 | -.1670 | .0455 | .0455 |
| | .3 | .0299 | -.1344 | .8318 | .3430 | -.0704 | .0299 | .0299 | -.1045 | -.1045 | .7273 | -.2727 | .0704 | .0704 |
| | .4 | .0309 | -.1389 | .7209 | .4795 | -.0925 | .0309 | .0309 | -.1079 | -.1079 | .6130 | -.3870 | .0925 | .0925 |
| | .5 | .0288 | -.1292 | .5949 | .6145 | -.1090 | .0288 | .0288 | -.1005 | -.1005 | .4945 | -.5055 | .1090 | .1090 |
| | .6 | .0243 | -.1093 | .4614 | .7403 | -.1167 | .0243 | .0243 | -.0849 | -.0849 | .3764 | -.6236 | .1167 | .1167 |
| | .7 | .0184 | -.0827 | .3276 | .8494 | -.1127 | .0184 | .0184 | -.0643 | -.0643 | .2634 | -.7366 | .1127 | .1127 |
| | .8 | .0118 | -.0531 | .2012 | .9341 | -.0940 | .0118 | .0118 | -.0413 | -.0413 | .1599 | -.8401 | .0940 | .0940 |
| .9 | .0054 | -.0243 | .0895 | .9868 | -.0574 | .0054 | .0054 | -.0189 | -.0189 | .0706 | -.9294 | .0574 | .0574 | |
| SPAN 4 | D | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | -1.0 | 0 | 1.0 | |
| | .1 | -.0031 | .0079 | -.0289 | .1460 | .8767 | -.0018 | -.0018 | .0062 | .0062 | -.0227 | -.0227 | .1233 | -.8767 |
| | .2 | -.0052 | .0231 | -.0841 | .9339 | .1322 | -.0052 | -.0052 | .0180 | .0180 | -.0661 | -.0661 | .8678 | -.1322 |
| | .3 | -.0064 | .0287 | -.1043 | .8660 | .2160 | -.0064 | -.0064 | .0223 | .0223 | -.0820 | -.0820 | .7840 | -.2160 |
| | .4 | -.0069 | .0308 | -.1122 | .7785 | .3097 | -.0069 | -.0069 | .0240 | .0240 | -.0882 | -.0882 | .6903 | -.3097 |
| | .5 | -.0067 | .0301 | -.1095 | .6744 | .4118 | -.0067 | -.0067 | .0234 | .0234 | -.0861 | -.0861 | .5882 | -.4118 |
| | .6 | -.0060 | .0270 | -.0981 | .5562 | .5209 | -.0060 | -.0060 | .0210 | .0210 | -.0772 | -.0772 | .4791 | -.5209 |
| | .7 | -.0049 | .0219 | -.0797 | .4269 | .6358 | -.0049 | -.0049 | .0170 | .0170 | -.0627 | -.0627 | .3642 | -.6358 |
| | .8 | -.0034 | .0154 | -.0561 | .2893 | .7548 | -.0034 | -.0034 | .0120 | .0120 | -.0441 | -.0441 | .2452 | -.7548 |
| .9 | -.0018 | .0079 | -.0289 | .1460 | .8767 | -.0018 | -.0018 | .0062 | .0062 | -.0227 | -.0227 | .1233 | -.8767 | |
| E | 0 | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -1.0 | |
| + Area | .4661 | 1.3856 | 1.4646 | 1.3856 | .4661 | .4661 | .0249 | .7278 | .0730 | .7323 | .0871 | .6577 | .0989 | |
| - Area | -.0989 | -.1120 | -.1461 | -.1120 | -.0989 | -.0989 | -.6577 | -.0871 | -.7323 | -.0730 | -.7278 | -.0249 | -.4661 | |
| Total Area | .3672 | 1.2736 | 1.3185 | 1.2736 | .3672 | .3672 | -.6328 | .6407 | -.6593 | .6593 | -.6407 | .6328 | -.3672 | |

Influence coefficients — Four continuous spans.

L = Length of EXTERIOR spans; length of interior spans = NL.

N=1.3

| Unit load at | REACTIONS/P | | | | | SHEARS/P | | | | | | | | |
|--------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------|
| | R _A | R _B | R _C | R _D | R _E | V _{AB} | V _{BA} | V _{BC} | V _{CB} | V _{CD} | V _{DC} | V _{DE} | V _{ED} | |
| SPAN 1 | A | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | .8776 | .1427 | -.0259 | .0073 | -.0017 | .8776 | -.1224 | .0203 | .0203 | -.0056 | -.0056 | .0017 | .0017 |
| | .2 | .7566 | .2828 | -.0502 | .0142 | -.0034 | .7566 | -.2434 | .0394 | .0394 | -.0108 | -.0108 | .0034 | .0034 |
| | .3 | .6383 | .4177 | -.0713 | .0202 | -.0049 | .6383 | -.3617 | .0560 | .0560 | -.0154 | -.0154 | .0049 | .0049 |
| | .4 | .5240 | .5449 | -.0878 | .0249 | -.0060 | .5240 | -.4760 | .0689 | .0689 | -.0189 | -.0189 | .0060 | .0060 |
| | .5 | .4152 | .6617 | -.0980 | .0278 | -.0067 | .4152 | -.5848 | .0769 | .0769 | -.0211 | -.0211 | .0067 | .0067 |
| | .6 | .3132 | .7656 | -.1003 | .0284 | -.0068 | .3132 | -.6868 | .0787 | .0787 | -.0216 | -.0216 | .0068 | .0068 |
| | .7 | .2193 | .8539 | -.0933 | .0264 | -.0063 | .2193 | -.7807 | .0732 | .0732 | -.0201 | -.0201 | .0063 | .0063 |
| | .8 | .1349 | .9242 | -.0753 | .0213 | -.0051 | .1349 | -.8651 | .0591 | .0591 | -.0162 | -.0162 | .0051 | .0051 |
| .9 | .0613 | .9737 | -.0447 | .0127 | -.0030 | .0613 | -.9387 | .0351 | .0351 | -.0096 | -.0096 | .0030 | .0030 | |
| SPAN 2 | B | 0 | 1.0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | -.0640 | .9953 | .0873 | -.0244 | .0059 | -.0640 | -.0640 | .9313 | -.0687 | .0186 | .0186 | -.0059 | -.0059 |
| | .2 | -.1047 | .9479 | .1977 | -.0537 | .0129 | -.1047 | -.1047 | .8432 | -.1568 | .0408 | .0408 | -.0129 | -.0129 |
| | .3 | -.1256 | .8659 | .3236 | -.0840 | .0202 | -.1256 | -.1256 | .7403 | -.2597 | .0638 | .0638 | -.0202 | -.0202 |
| | .4 | -.1300 | .7573 | .4574 | -.1115 | .0268 | -.1300 | -.1300 | .6273 | -.3727 | .0847 | .0847 | -.0268 | -.0268 |
| | .5 | -.1214 | .6303 | .5915 | -.1322 | .0317 | -.1214 | -.1214 | .5090 | -.4910 | .1004 | .1004 | -.0317 | -.0317 |
| | .6 | -.1030 | .4929 | .7182 | -.1423 | .0342 | -.1030 | -.1030 | .3899 | -.6101 | .1081 | .1081 | -.0342 | -.0342 |
| | .7 | -.0783 | .3531 | .8301 | -.1380 | .0331 | -.0783 | -.0783 | .2748 | -.7252 | .1049 | .1049 | -.0331 | -.0331 |
| | .8 | -.0507 | .2190 | .9194 | -.1154 | .0277 | -.0507 | -.0507 | .1683 | -.8317 | .0877 | .0877 | -.0277 | -.0277 |
| .9 | -.0234 | .0986 | .9786 | -.0707 | .0170 | -.0234 | -.0234 | .0751 | -.9249 | .0537 | .0537 | -.0170 | -.0170 | |
| SPAN 3 | C | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 0 | 0 | |
| | .1 | .0170 | -.0707 | .9786 | .0986 | -.0234 | .0170 | .0170 | -.0537 | -.0537 | .9249 | -.0751 | .0234 | .0234 |
| | .2 | .0277 | -.1154 | .9194 | .2190 | -.0507 | .0277 | .0277 | -.0877 | -.0877 | .8317 | -.1683 | .0507 | .0507 |
| | .3 | .0331 | -.1380 | .8301 | .3531 | -.0783 | .0331 | .0331 | -.1049 | -.1049 | .7252 | -.2748 | .0783 | .0783 |
| | .4 | .0342 | -.1423 | .7182 | .4929 | -.1030 | .0342 | .0342 | -.1081 | -.1081 | .6101 | -.3899 | .1030 | .1030 |
| | .5 | .0317 | -.1322 | .5915 | .6303 | -.1214 | .0317 | .0317 | -.1004 | -.1004 | .4910 | -.5090 | .1214 | .1214 |
| | .6 | .0268 | -.1115 | .4574 | .7573 | -.1300 | .0268 | .0268 | -.0847 | -.0847 | .3727 | -.6273 | .1300 | .1300 |
| | .7 | .0202 | -.0840 | .3236 | .8659 | -.1256 | .0202 | .0202 | -.0638 | -.0638 | .2597 | -.7403 | .1256 | .1256 |
| | .8 | .0129 | -.0537 | .1977 | .9479 | -.1047 | .0129 | .0129 | -.0408 | -.0408 | .1568 | -.8432 | .1047 | .1047 |
| .9 | .0059 | -.0244 | .0873 | .9953 | -.0640 | .0059 | .0059 | -.0186 | -.0186 | .0687 | -.9313 | .0640 | .0640 | |
| SPAN 4 | D | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | -1.0 | 0 | 0 | |
| | .1 | -.0030 | .0127 | -.0447 | .9737 | .0613 | -.0030 | -.0030 | .0096 | .0096 | -.0351 | -.0351 | .9387 | -.0613 |
| | .2 | -.0051 | .0213 | -.0753 | .9242 | .1349 | -.0051 | -.0051 | .0162 | .0162 | -.0591 | -.0591 | .8651 | -.1349 |
| | .3 | -.0063 | .0264 | -.0933 | .8539 | .2193 | -.0063 | -.0063 | .0201 | .0201 | -.0732 | -.0732 | .7807 | -.2193 |
| | .4 | -.0068 | .0284 | -.1003 | .7656 | .3132 | -.0068 | -.0068 | .0216 | .0216 | -.0787 | -.0787 | .6868 | -.3132 |
| | .5 | -.0067 | .0278 | -.0980 | .6617 | .4152 | -.0067 | -.0067 | .0211 | .0211 | -.0769 | -.0769 | .5848 | -.4152 |
| | .6 | -.0060 | .0249 | -.0878 | .5449 | .5240 | -.0060 | -.0060 | .0189 | .0189 | -.0689 | -.0689 | .4760 | -.5240 |
| | .7 | -.0049 | .0202 | -.0713 | .4177 | .6383 | -.0049 | -.0049 | .0154 | .0154 | -.0560 | -.0560 | .3617 | -.6383 |
| | .8 | -.0034 | .0142 | -.0502 | .2828 | .7566 | -.0034 | -.0034 | .0108 | .0108 | -.0394 | -.0394 | .2434 | -.7566 |
| .9 | -.0017 | .0073 | -.0259 | .1427 | .8776 | -.0017 | -.0017 | .0056 | .0056 | -.0203 | -.0203 | .1224 | -.8776 | |
| E | 0 | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -1.0 | |
| + Area | .4731 | 1.4480 | 1.5707 | 1.4480 | .4731 | .4731 | .0296 | .7737 | .0653 | .7854 | .0937 | .6743 | .1177 | |
| - Area | -.1177 | -.1234 | -.1306 | -.1234 | -.1177 | -.1177 | -.6743 | -.0937 | -.7854 | -.0653 | -.7737 | -.0296 | -.4731 | |
| Total Area | .3554 | 1.3246 | 1.4401 | 1.3246 | .3554 | .3554 | -.6447 | .6800 | -.7201 | .7201 | -.6800 | .6447 | -.3554 | |

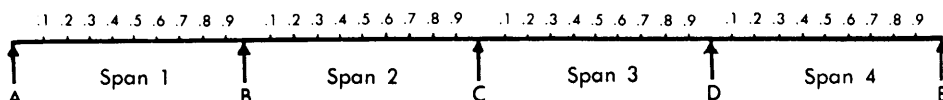
Influence coefficients — Four continuous spans.

L = Length of EXTERIOR spans; length of interior spans = NL.

N=1.4

| Unit load at | MOMENTS/PL | | | | | | | | | | | | | | | | | | | | | |
|--------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | SPAN 1 | | | | | | | | | | SPAN 2 | | | | | | | | | | | |
| | A | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | B | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | C | |
| SPAN 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0878 | .0757 | .0635 | .0514 | .0392 | .0271 | .0149 | .0028 | -.0094 | -.0215 | -.0188 | -.0161 | -.0133 | -.0106 | -.0079 | -.0051 | -.0024 | .0003 | .0031 | .0058 |
| | .2 | 0 | .0758 | .1516 | .1275 | .1033 | .0791 | .0549 | .0307 | .0066 | -.0176 | -.0418 | -.0365 | -.0312 | -.0259 | -.0206 | -.0152 | -.0099 | -.0046 | .0007 | .0060 | .0113 |
| | .3 | 0 | .0641 | .1281 | .1922 | .1562 | .1203 | .0843 | .0484 | .0125 | -.0235 | -.0594 | -.0519 | -.0443 | -.0368 | -.0292 | -.0217 | -.0141 | -.0066 | .0010 | .0085 | .0161 |
| | .4 | 0 | .0527 | .1054 | .1581 | .2107 | .1634 | .1161 | .0688 | .0215 | -.0258 | -.0731 | -.0638 | -.0546 | -.0453 | -.0360 | -.0267 | -.0174 | -.0081 | .0012 | .0105 | .0198 |
| | .5 | 0 | .0418 | .0837 | .1255 | .1674 | .2092 | .1510 | .0929 | .0347 | -.0235 | -.0816 | -.0713 | -.0609 | -.0505 | -.0401 | -.0298 | -.0194 | -.0090 | .0013 | .0117 | .0221 |
| | .6 | 0 | .0316 | .0633 | .0949 | .1266 | .1582 | .1899 | .1215 | .0531 | -.0152 | -.0836 | -.0730 | -.0623 | -.0517 | -.0411 | -.0305 | -.0199 | -.0093 | .0014 | .0120 | .0226 |
| | .7 | 0 | .0222 | .0445 | .0667 | .0889 | .1112 | .1334 | .1556 | .0778 | .0001 | -.0777 | -.0678 | -.0580 | -.0481 | -.0382 | -.0284 | -.0185 | -.0086 | .0013 | .0111 | .0210 |
| | .8 | 0 | .0137 | .0275 | .0412 | .0549 | .0687 | .0824 | .0961 | .1099 | .0236 | -.0627 | -.0547 | -.0468 | -.0388 | -.0308 | -.0229 | -.0149 | -.0069 | .0010 | .0090 | .0169 |
| .9 | 0 | .0063 | .0126 | .0188 | .0251 | .0314 | .0377 | .0439 | .0502 | .0565 | -.0372 | -.0325 | -.0278 | -.0230 | -.0183 | -.0136 | -.0089 | -.0041 | .0006 | .0053 | .0101 | |
| SPAN 2 | B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | -.0071 | -.0141 | -.0212 | -.0283 | -.0353 | -.0424 | -.0494 | -.0565 | -.0636 | -.0706 | .0693 | .0593 | .0492 | .0392 | .0292 | .0191 | .0091 | -.0010 | -.0110 | -.0210 |
| | .2 | 0 | -.0116 | -.0231 | -.0347 | -.0462 | -.0578 | -.0694 | -.0809 | -.0925 | -.1041 | -.1156 | .0113 | .1382 | .1151 | .0920 | .0689 | .0458 | .0227 | -.0004 | -.0235 | -.0466 |
| | .3 | 0 | -.0139 | -.0277 | -.0416 | -.0555 | -.0693 | -.0832 | -.0971 | -.1110 | -.1248 | -.1387 | -.0271 | .0844 | .1960 | .1575 | .1191 | .0806 | .0422 | .0037 | -.0347 | -.0732 |
| | .4 | 0 | -.0144 | -.0287 | -.0431 | -.0574 | -.0718 | -.0861 | -.1005 | -.1149 | -.1292 | -.1436 | -.0490 | .0457 | .1403 | .2349 | .1795 | .1241 | .0687 | .0134 | -.0420 | -.0974 |
| | .5 | 0 | -.0134 | -.0268 | -.0402 | -.0536 | -.0670 | -.0804 | -.0938 | -.1072 | -.1206 | -.1340 | -.0572 | .0196 | .0965 | .1733 | .2501 | .1769 | .1037 | .0306 | -.0426 | -.1158 |
| | .6 | 0 | -.0114 | -.0227 | -.0341 | -.0455 | -.0569 | -.0682 | -.0796 | -.0910 | -.1023 | -.1137 | -.0548 | .0040 | .0629 | .1218 | .1807 | .2395 | .1484 | .0573 | -.0338 | -.1249 |
| | .7 | 0 | -.0086 | -.0173 | -.0259 | -.0346 | -.0432 | -.0519 | -.0605 | -.0692 | -.0778 | -.0864 | -.0449 | -.0034 | -.0381 | .0796 | .1211 | .1626 | .2041 | .0956 | -.0129 | -.1214 |
| | .8 | 0 | -.0056 | -.0112 | -.0168 | -.0224 | -.0280 | -.0335 | -.0391 | -.0447 | -.0503 | -.0559 | -.0305 | -.0051 | -.0204 | .0458 | .0712 | .0966 | .1221 | .1475 | .0229 | -.1016 |
| .9 | 0 | -.0026 | -.0052 | -.0078 | -.0103 | -.0129 | -.0155 | -.0181 | -.0207 | -.0233 | -.0258 | -.0145 | -.0031 | -.0082 | .0196 | .0309 | .0423 | .0536 | .0650 | .0763 | -.0623 | |
| SPAN 3 | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0019 | .0037 | .0056 | .0075 | .0094 | .0112 | .0131 | .0150 | .0168 | .0187 | .0106 | .0025 | -.0056 | -.0137 | -.0218 | -.0299 | -.0380 | -.0461 | -.0542 | -.0623 |
| | .2 | 0 | .0030 | .0061 | .0091 | .0122 | .0152 | .0183 | .0213 | .0244 | .0274 | .0305 | .0173 | .0041 | -.0091 | -.0224 | -.0356 | -.0488 | -.0620 | -.0752 | -.0884 | -.1016 |
| | .3 | 0 | .0036 | .0073 | .0109 | .0146 | .0182 | .0218 | .0255 | .0291 | .0328 | .0364 | .0206 | .0049 | -.0109 | -.0267 | -.0425 | -.0583 | -.0740 | -.0898 | -.1056 | -.1214 |
| | .4 | 0 | .0037 | .0075 | .0112 | .0150 | .0187 | .0225 | .0262 | .0300 | .0337 | .0375 | .0212 | .0050 | -.0112 | -.0275 | -.0437 | -.0600 | -.0762 | -.0925 | -.1087 | -.1249 |
| | .5 | 0 | .0035 | .0069 | .0104 | .0139 | .0174 | .0208 | .0243 | .0278 | .0313 | .0347 | .0197 | .0046 | -.0104 | -.0255 | -.0405 | -.0556 | -.0706 | -.0857 | -.1008 | -.1158 |
| | .6 | 0 | .0029 | .0058 | .0088 | .0117 | .0146 | .0175 | .0205 | .0234 | .0263 | .0292 | .0166 | .0039 | -.0088 | -.0214 | -.0341 | -.0468 | -.0594 | -.0721 | -.0847 | -.0974 |
| | .7 | 0 | .0022 | .0044 | .0066 | .0088 | .0110 | .0132 | .0154 | .0176 | .0198 | .0220 | .0124 | .0029 | -.0066 | -.0161 | -.0256 | -.0351 | -.0446 | -.0542 | -.0637 | -.0732 |
| | .8 | 0 | .0014 | .0028 | .0042 | .0056 | .0070 | .0084 | .0098 | .0112 | .0126 | .0140 | .0079 | .0019 | -.0042 | -.0102 | -.0163 | -.0224 | -.0284 | -.0345 | -.0405 | -.0466 |
| .9 | 0 | .0006 | .0013 | .0019 | .0025 | .0032 | .0038 | .0044 | .0051 | .0057 | .0063 | .0036 | .0008 | -.0019 | -.0046 | -.0074 | -.0101 | -.0128 | -.0156 | -.0183 | -.0210 | |
| SPAN 4 | D | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | -.0003 | -.0006 | -.0009 | -.0012 | -.0015 | -.0018 | -.0021 | -.0024 | -.0027 | -.0030 | -.0017 | -.0004 | .0009 | .0022 | .0035 | .0048 | .0061 | .0074 | .0088 | .0101 |
| | .2 | 0 | -.0005 | -.0010 | -.0015 | -.0020 | -.0025 | -.0030 | -.0036 | -.0041 | -.0046 | -.0051 | -.0029 | -.0007 | .0015 | .0037 | .0059 | .0081 | .0103 | .0125 | .0147 | .0169 |
| | .3 | 0 | -.0006 | -.0013 | -.0019 | -.0025 | -.0032 | -.0038 | -.0044 | -.0050 | -.0057 | -.0063 | -.0036 | -.0008 | .0019 | .0046 | .0074 | .0101 | .0128 | .0155 | .0183 | .0210 |
| | .4 | 0 | -.0007 | -.0014 | -.0020 | -.0027 | -.0034 | -.0041 | -.0047 | -.0054 | -.0061 | -.0068 | -.0038 | -.0009 | .0020 | .0050 | .0079 | .0108 | .0138 | .0167 | .0197 | .0226 |
| | .5 | 0 | -.0007 | -.0013 | -.0020 | -.0026 | -.0033 | -.0040 | -.0046 | -.0053 | -.0060 | -.0066 | -.0037 | -.0009 | .0020 | .0049 | .0077 | .0106 | .0135 | .0163 | .0192 | .0221 |
| | .6 | 0 | -.0006 | -.0012 | -.0018 | -.0024 | -.0030 | -.0036 | -.0042 | -.0047 | -.0053 | -.0059 | -.0034 | -.0008 | .0018 | .0043 | .0069 | .0095 | .0121 | .0146 | .0172 | .0198 |
| | .7 | 0 | -.0005 | -.0010 | -.0014 | -.0019 | -.0024 | -.0029 | -.0034 | -.0039 | -.0043 | -.0048 | -.0027 | -.0006 | .0014 | .0035 | .0056 | .0077 | .0098 | .0119 | .0140 | .0161 |
| | .8 | 0 | -.0003 | -.0007 | -.0010 | -.0014 | -.0017 | -.0020 | -.0024 | -.0027 | -.0030 | -.0034 | -.0019 | -.0005 | .0010 | .0025 | .0040 | .0054 | .0069 | .0084 | .0098 | .0113 |
| .9 | 0 | -.0002 | -.0003 | -.0005 | -.0007 | -.0009 | -.0010 | -.0012 | -.0014 | -.0016 | -.0017 | -.0010 | -.0002 | .0005 | .0013 | .0020 | .0028 | .0036 | .0043 | .0051 | .0058 | |
| + Area | | 0 | .0430 | .0761 | .0991 | .1121 | .1152 | .1082 | .0912 | .0643 | .0390 | .0347 | .0306 | .0560 | .1090 | .1465 | .1615 | .1540 | .1240 | .0725 | .0342 | .0294 |
| - Area | | 0 | -.0138 | -.0277 | -.0415 | -.0554 | -.0692 | -.0831 | -.0969 | -.1108 | -.1363 | -.1928 | -.0918 | -.0429 | -.0441 | -.0522 | -.0604 | -.0685 | -.0767 | -.0859 | -.1308 | -.2316 |
| Total Area | | 0 | .0292 | .0484 | .0576 | .0567 | .0460 | .0251 | -.0057 | -.0465 | -.0973 | -.1581 | -.0612 | .0131 | .0649 | .0943 | .1011 | .0855 | .0473 | -.0134 | -.0966 | -.2022 |

TABLE A4.5



| Unit load of | REACTIONS/P | | | | | SHEARS/P | | | | | | | | |
|--------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------|
| | R _A | R _B | R _C | R _D | R _E | V _{AB} | V _{BA} | V _{BC} | V _{CB} | V _{CD} | V _{DC} | V _{DE} | V _{ED} | |
| SPAN 1 | A | 1.0 | 0 | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | .8785 | .1398 | -.0233 | .0068 | -.0017 | .8785 | -.1215 | .0182 | .0182 | -.0050 | -.0050 | .0017 | .0017 |
| | .2 | .7582 | .2772 | -.0452 | .0132 | -.0034 | .7582 | -.2418 | .0354 | .0354 | -.0098 | -.0098 | .0034 | .0034 |
| | .3 | .6406 | .4097 | -.0642 | .0187 | -.0048 | .6406 | -.3594 | .0503 | .0503 | -.0139 | -.0139 | .0048 | .0048 |
| | .4 | .5269 | .5351 | -.0791 | .0230 | -.0059 | .5269 | -.4731 | .0619 | .0619 | -.0171 | -.0171 | .0059 | .0059 |
| | .5 | .4184 | .6507 | -.0882 | .0257 | -.0066 | .4184 | -.5816 | .0691 | .0691 | -.0191 | -.0191 | .0066 | .0066 |
| | .6 | .3164 | .7544 | -.0903 | .0263 | -.0068 | .3164 | -.6836 | .0708 | .0708 | -.0196 | -.0196 | .0068 | .0068 |
| | .7 | .2223 | .8435 | -.0840 | .0245 | -.0063 | .2223 | -.7777 | .0658 | .0658 | -.0182 | -.0182 | .0063 | .0063 |
| | .8 | .1373 | .9158 | -.0678 | .0198 | -.0051 | .1373 | -.8627 | .0531 | .0531 | -.0147 | -.0147 | .0051 | .0051 |
| | .9 | .0628 | .9687 | -.0402 | .0117 | -.0030 | .0628 | -.9372 | .0315 | .0315 | -.0087 | -.0087 | .0030 | .0030 |
| SPAN 2 | B | 0 | 1.0 | 0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | -.0706 | 1.0037 | -.0852 | -.0246 | .0063 | -.0706 | -.0706 | .9331 | -.0669 | .0182 | .0182 | -.0063 | -.0063 |
| | .2 | -.1156 | .9616 | -.1944 | -.0544 | .0140 | -.1156 | -.1156 | .8460 | -.1540 | .0404 | .0404 | -.0140 | -.0140 |
| | .3 | -.1387 | .8824 | -.3198 | -.0854 | .0220 | -.1387 | -.1387 | .7437 | -.2563 | .0634 | .0634 | -.0220 | -.0220 |
| | .4 | -.1436 | .7744 | -.4536 | -.1136 | .0292 | -.1436 | -.1436 | .6308 | -.3692 | .0844 | .0844 | -.0292 | -.0292 |
| | .5 | -.1340 | .6461 | -.5882 | -.1351 | .0347 | -.1340 | -.1340 | .5121 | -.4879 | .1004 | .1004 | -.0347 | -.0347 |
| | .6 | -.1137 | .5062 | -.7158 | -.1458 | .0375 | -.1137 | -.1137 | .3925 | -.6075 | .1083 | .1083 | -.0375 | -.0375 |
| | .7 | -.0864 | .3632 | -.8285 | -.1416 | .0364 | -.0864 | -.0864 | .2767 | -.7233 | .1052 | .1052 | -.0364 | -.0364 |
| | .8 | -.0559 | .2254 | -.9186 | -.1186 | .0305 | -.0559 | -.0559 | .1695 | -.8305 | .0881 | .0881 | -.0305 | -.0305 |
| | .9 | -.0258 | .1015 | -.9784 | -.0727 | .0187 | -.0258 | -.0258 | .0757 | -.9243 | .0540 | .0540 | -.0187 | -.0187 |
| SPAN 3 | C | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 0 | 0 | |
| | .1 | .0187 | -.0727 | .9784 | .1015 | -.0258 | .0187 | -.0187 | -.0540 | -.0540 | .9243 | -.0757 | .0258 | .0258 |
| | .2 | .0305 | -.1186 | .9186 | .2254 | -.0559 | .0305 | .0305 | -.0881 | -.0881 | .8305 | -.1695 | .0559 | .0559 |
| | .3 | .0364 | -.1416 | .8285 | .3632 | -.0864 | .0364 | .0364 | -.1052 | -.1052 | .7233 | -.2767 | .0864 | .0864 |
| | .4 | .0375 | -.1458 | .7158 | .5062 | -.1137 | .0375 | .0375 | -.1083 | -.1083 | .6075 | -.3925 | .1137 | .1137 |
| | .5 | .0347 | -.1351 | .5882 | .6461 | -.1340 | .0347 | .0347 | -.1004 | -.1004 | .4879 | -.5121 | .1340 | .1340 |
| | .6 | .0292 | -.1136 | .4536 | .7744 | -.1436 | .0292 | .0292 | -.0844 | -.0844 | .3692 | -.6308 | .1436 | .1436 |
| | .7 | .0220 | -.0854 | .3198 | .8824 | -.1387 | .0220 | .0220 | -.0634 | -.0634 | .2563 | -.7437 | .1387 | .1387 |
| | .8 | .0140 | -.0544 | .1944 | .9616 | -.1156 | .0140 | .0140 | -.0404 | -.0404 | .1540 | -.8460 | .1156 | .1156 |
| | .9 | .0063 | -.0246 | .0852 | 1.0037 | -.0706 | .0063 | .0063 | -.0182 | -.0182 | .0669 | -.9331 | .0706 | .0706 |
| SPAN 4 | D | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | -1.0 | 0 | 0 | |
| | .1 | -.0030 | .0117 | -.0402 | .9687 | .0628 | -.0030 | -.0030 | .0087 | .0087 | -.0315 | -.0315 | .9372 | -.0628 |
| | .2 | -.0051 | .0198 | -.0678 | .9158 | .1373 | -.0051 | -.0051 | .0147 | .0147 | -.0531 | -.0531 | .8627 | -.1373 |
| | .3 | -.0063 | .0245 | -.0840 | .8435 | .2223 | -.0063 | -.0063 | .0182 | .0182 | -.0658 | -.0658 | .7777 | -.2223 |
| | .4 | -.0068 | .0263 | -.0903 | .7544 | .3164 | -.0068 | -.0068 | .0196 | .0196 | -.0708 | -.0708 | .6836 | -.3164 |
| | .5 | -.0066 | .0257 | -.0882 | .6507 | .4184 | -.0066 | -.0066 | .0191 | .0191 | -.0691 | -.0691 | .5816 | -.4184 |
| | .6 | -.0059 | .2030 | -.0791 | .5351 | .5269 | -.0059 | -.0059 | .0171 | .0171 | -.0619 | -.0619 | .4731 | -.5269 |
| | .7 | -.0048 | .0187 | -.0642 | .4097 | .6406 | -.0048 | -.0048 | .0139 | .0139 | -.0503 | -.0503 | .3594 | -.6406 |
| | .8 | -.0034 | .0132 | -.0452 | .2772 | .7582 | -.0034 | -.0034 | .0098 | .0098 | -.0354 | -.0354 | .2418 | -.7582 |
| | .9 | -.0017 | .0068 | -.0233 | .1398 | .8785 | -.0017 | -.0017 | .0050 | .0050 | -.0182 | -.0182 | .1215 | -.8785 |
| E | 0 | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -1.0 | |
| + Area | | .4803 | 1.5138 | 1.6765 | 1.5138 | .4803 | .4803 | .0347 | .8210 | .0588 | .8382 | .1004 | .6928 | .1384 |
| - Area | | -.1384 | -.1351 | -.1176 | -.1351 | -.1384 | -.1384 | -.6928 | -.1004 | -.8382 | -.0588 | -.8210 | -.0347 | -.4803 |
| Total Area | | .3419 | 1.3787 | 1.5589 | 1.3787 | .3419 | .3419 | -.6581 | .7206 | -.7794 | .7794 | -.7206 | .6581 | -.3419 |

Influence coefficients — Four continuous spans.

L = Length of EXTERIOR spans; length of interior spans = NL.

N=1.5

| Unit load at | REACTIONS/P | | | | | SHEARS/P | | | | | | | | |
|--------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------|
| | R _A | R _B | R _C | R _D | R _E | V _{AB} | V _{BA} | V _{BC} | V _{CB} | V _{CD} | V _{DC} | V _{DE} | V _{ED} | |
| SPAN 1 | A | 1.0 | 0 | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | .8792 | .1373 | -.0211 | .0063 | -.0017 | .8792 | -.1208 | .0165 | .0165 | -.0046 | -.0046 | .0017 | .0017 |
| | .2 | .7597 | .2723 | -.0409 | .0123 | -.0034 | .7597 | -.2403 | .0320 | .0320 | -.0089 | -.0089 | .0034 | .0034 |
| | .3 | .6427 | .4028 | -.0582 | .0175 | -.0048 | .6427 | -.3573 | .0455 | .0455 | -.0127 | -.0127 | .0048 | .0048 |
| | .4 | .5295 | .5265 | -.0716 | .0215 | -.0059 | .5295 | -.4705 | .0560 | .0560 | -.0156 | -.0156 | .0059 | .0059 |
| | .5 | .4213 | .6412 | -.0799 | .0240 | -.0066 | .4213 | -.5787 | .0625 | .0625 | -.0174 | -.0174 | .0066 | .0066 |
| | .6 | .3194 | .7445 | -.0818 | .0245 | -.0067 | .3194 | -.6806 | .0640 | .0640 | -.0178 | -.0178 | .0067 | .0067 |
| | .7 | .2251 | .8344 | -.0761 | .0228 | -.0062 | .2251 | -.7749 | .0595 | .0595 | -.0166 | -.0166 | .0062 | .0062 |
| | .8 | .1396 | .9084 | -.0614 | .0184 | -.0050 | .1396 | -.8604 | .0480 | .0480 | -.0134 | -.0134 | .0050 | .0050 |
| | .9 | .0641 | .9644 | -.0364 | .0109 | -.0030 | .0641 | -.9359 | .0285 | .0285 | -.0079 | -.0079 | .0030 | .0030 |
| SPAN 2 | B | 0 | 1.0 | 0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | -.0774 | 1.0121 | .0832 | -.0247 | .0067 | -.0774 | -.0774 | .9347 | -.0653 | .0179 | .0179 | -.0067 | -.0067 |
| | .2 | -.1267 | .9754 | .1913 | -.0550 | .0150 | -.1267 | -.1267 | .8487 | -.1513 | .0399 | .0399 | -.0150 | -.0150 |
| | .3 | -.1520 | .8988 | .3162 | -.0868 | .0237 | -.1520 | -.1520 | .7468 | -.2532 | .0630 | .0630 | -.0237 | -.0237 |
| | .4 | -.1574 | .7913 | .4502 | -.1159 | .0317 | -.1574 | -.1574 | .6340 | -.3660 | .0842 | .0842 | -.0317 | -.0317 |
| | .5 | -.1469 | .6619 | .5852 | -.1381 | .0378 | -.1469 | -.1469 | .5151 | -.4849 | .1003 | .1003 | -.0378 | -.0378 |
| | .6 | -.1246 | .5196 | .7135 | -.1492 | .0408 | -.1246 | -.1246 | .3950 | -.6050 | .1084 | .1084 | -.0408 | -.0408 |
| | .7 | -.0947 | .3732 | .8270 | -.1452 | .0397 | -.0947 | -.0947 | .2785 | -.7215 | .1055 | .1055 | -.0397 | -.0397 |
| | .8 | -.0612 | .2319 | .9178 | -.1217 | .0333 | -.0612 | -.0612 | .1706 | -.8294 | .0884 | .0884 | -.0333 | -.0333 |
| | .9 | -.0283 | .1045 | .9781 | -.0747 | .0204 | -.0283 | -.0283 | .0762 | -.9238 | .0543 | .0543 | -.0204 | -.0204 |
| SPAN 3 | C | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 0 | |
| | .1 | .0204 | -.0747 | .9781 | .1045 | -.0283 | .0204 | .0204 | -.0543 | -.0543 | .9283 | -.0762 | .0283 | .0283 |
| | .2 | .0333 | -.1217 | .9178 | .2319 | -.0612 | .0333 | .0333 | -.0884 | -.0884 | .8294 | -.1706 | .0612 | .0612 |
| | .3 | .0397 | -.1452 | .8270 | .3732 | -.0947 | .0397 | .0397 | -.1055 | -.1055 | .7215 | -.2785 | .0947 | .0947 |
| | .4 | .0408 | -.1492 | .7135 | .5196 | -.1246 | .0408 | .0408 | -.1084 | -.1084 | .6050 | -.3950 | .1246 | .1246 |
| | .5 | .0378 | -.1381 | .5852 | .6619 | -.1469 | .0378 | .0378 | -.1003 | -.1003 | .4849 | -.5151 | .1469 | .1469 |
| | .6 | .0317 | -.1159 | .4502 | .7913 | -.1574 | .0317 | .0317 | -.0842 | -.0842 | .3660 | -.6340 | .1574 | .1574 |
| | .7 | .0237 | -.0868 | .3162 | .8988 | -.1520 | .0237 | .0237 | -.0630 | -.0630 | .2532 | -.7468 | .1520 | .1520 |
| | .8 | .0150 | -.0550 | .1913 | .9754 | -.1267 | .0150 | .0150 | -.0399 | -.0399 | .1513 | -.8487 | .1267 | .1267 |
| | .9 | .0067 | -.0247 | .0832 | 1.0121 | -.0774 | .0067 | .0067 | -.0179 | -.0179 | .0653 | -.9347 | .0774 | .0774 |
| SPAN 4 | D | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | -1.0 | 0 | |
| | .1 | -.0030 | .0109 | -.0364 | .9644 | .0641 | -.0030 | -.0030 | .0079 | .0079 | -.0285 | -.0285 | .9359 | -.0641 |
| | .2 | -.0050 | .0184 | -.0614 | .9084 | .1396 | -.0050 | -.0050 | .0134 | .0134 | -.0480 | -.0480 | .8604 | -.1396 |
| | .3 | -.0062 | .0228 | -.0761 | .8344 | .2251 | -.0062 | -.0062 | .0166 | .0166 | -.0595 | -.0595 | .7749 | -.2251 |
| | .4 | -.0067 | .0245 | -.0818 | .7445 | .3194 | -.0067 | -.0067 | .0178 | .0178 | -.0640 | -.0640 | .6806 | -.3194 |
| | .5 | -.0066 | .0240 | -.0799 | .6412 | .4213 | -.0066 | -.0066 | .0174 | .0174 | -.0625 | -.0625 | .5787 | -.4213 |
| | .6 | -.0059 | .0215 | -.0716 | .5265 | .5295 | -.0059 | -.0059 | .0156 | .0156 | -.0560 | -.0560 | .4705 | -.5295 |
| | .7 | -.0048 | .0175 | -.0582 | .4028 | .6427 | -.0048 | -.0048 | .0127 | .0127 | -.0455 | -.0455 | .3573 | -.6427 |
| | .8 | -.0034 | .0123 | -.0409 | .2723 | .7597 | -.0034 | -.0034 | .0089 | .0089 | -.0320 | -.0320 | .2403 | -.7597 |
| | .9 | -.0017 | .0063 | -.0211 | .1373 | .8792 | -.0017 | -.0017 | .0046 | .0046 | -.0165 | -.0165 | .1208 | -.8792 |
| E | 0 | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -1.0 | |
| + Area | .4878 | 1.5828 | 1.7818 | 1.5828 | .4878 | .4878 | .0403 | .8694 | .0533 | .8909 | .1070 | .7135 | .1610 | |
| - Area | -.1610 | -.1473 | -.1065 | -.1473 | -.1610 | -.1610 | -.7135 | -.1070 | -.8909 | -.0533 | -.8694 | -.0403 | -.4878 | |
| Total Area | .3268 | 1.4355 | 1.6753 | 1.4355 | .3268 | .3268 | -.6732 | .7624 | -.8376 | .8376 | -.7624 | .6732 | -.3268 | |

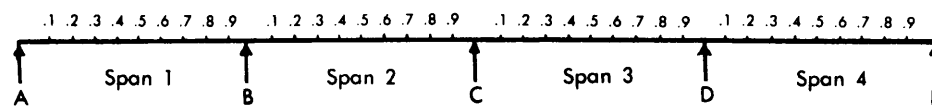
Influence coefficients — Four continuous spans.

L = Length of EXTERIOR spans; length of interior spans = NL.

N=1.6

| Unit load of | MOMENTS/PL | | | | | | | | | | | | | | | | | | | | | |
|--------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | SPAN 1 | | | | | | | | | | | SPAN 2 | | | | | | | | | | |
| | A | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | B | .1 | .2 | .3 | .4 | .5 | .6 | .7 | .8 | .9 | C | |
| SPAN 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | 0 | .0880 | .0760 | .0640 | .0520 | .0400 | .0280 | .0160 | .0040 | -.0080 | -.0200 | -.0175 | -.0149 | -.0124 | -.0099 | -.0073 | -.0048 | -.0022 | .0003 | .0029 | .0054 |
| | .2 | 0 | .0761 | .1522 | .1283 | .1044 | .0806 | .0567 | .0328 | .0089 | -.0150 | -.0389 | -.0339 | -.0290 | -.0240 | -.0191 | -.0142 | -.0092 | -.0043 | .0007 | .0056 | .0106 |
| | .3 | 0 | .0645 | .1289 | .1934 | .1579 | .1224 | .0868 | .0513 | .0158 | -.0198 | -.0553 | -.0483 | -.0412 | -.0342 | -.0272 | -.0201 | -.0131 | -.0061 | .0009 | .0080 | .0150 |
| | .4 | 0 | .0532 | .1064 | .1596 | .2128 | .1660 | .1192 | .0724 | .0256 | -.0212 | -.0680 | -.0594 | -.0507 | -.0421 | -.0334 | -.0248 | -.0161 | -.0075 | .0012 | .0098 | .0185 |
| | .5 | 0 | .0424 | .0848 | .1272 | .1696 | .2120 | .1544 | .0968 | .0393 | -.0183 | -.0759 | -.0663 | -.0566 | -.0470 | -.0373 | -.0277 | -.0180 | -.0084 | .0013 | .0110 | .0206 |
| | .6 | 0 | .0322 | .0644 | .0967 | .1289 | .1611 | .1933 | .1256 | .0578 | -.0100 | -.0778 | -.0679 | -.0580 | -.0481 | -.0382 | -.0283 | -.0184 | -.0086 | .0013 | .0112 | .0211 |
| | .7 | 0 | .0228 | .0455 | .0683 | .0911 | .1139 | .1366 | .1594 | .0822 | .0049 | -.0723 | -.0631 | -.0539 | -.0447 | -.0355 | -.0263 | -.0171 | -.0080 | .0012 | .0104 | .0196 |
| | .8 | 0 | .0142 | .0283 | .0425 | .0567 | .0708 | .0850 | .0992 | .1133 | .0275 | -.0583 | -.0509 | -.0435 | -.0361 | -.0287 | -.0212 | -.0138 | -.0064 | .0010 | .0084 | .0158 |
| | .9 | 0 | .0065 | .0131 | .0196 | .0262 | .0327 | .0392 | .0458 | .0523 | .0588 | -.0346 | -.0302 | -.0258 | -.0214 | -.0170 | -.0126 | -.0082 | -.0038 | .0006 | .0050 | .0094 |
| B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| SPAN 2 | .1 | C | -.0084 | -.0169 | -.0253 | -.0337 | -.0422 | -.0506 | -.0590 | -.0675 | -.0759 | -.0843 | .0748 | .0640 | .0531 | .0423 | .0314 | .0206 | .0098 | -.0011 | -.0119 | -.0228 |
| | .2 | 0 | -.0138 | -.0276 | -.0414 | -.0552 | -.0690 | -.0828 | -.0966 | -.1104 | -.1242 | -.1380 | .0067 | .1513 | .1260 | .1007 | .0754 | .0501 | .0248 | -.0005 | -.0258 | -.0511 |
| | .3 | 0 | -.0166 | -.0331 | -.0497 | -.0662 | -.0828 | -.0993 | -.1159 | -.1324 | -.1490 | -.1656 | -.0381 | .0894 | .2168 | .1743 | .1317 | .0892 | .0466 | .0041 | -.0385 | -.0810 |
| | .4 | 0 | -.0171 | -.0343 | -.0514 | -.0685 | -.0857 | -.1028 | -.1199 | -.1371 | -.1542 | -.1714 | -.0631 | .0452 | .1535 | .2618 | .2001 | .1384 | .0766 | .0149 | -.0468 | -.1085 |
| | .5 | 0 | -.0160 | -.0320 | -.0480 | -.0640 | -.0799 | -.0959 | -.1119 | -.1279 | -.1439 | -.1599 | -.0719 | .0162 | .1042 | .1922 | .2803 | .1983 | .1163 | .0343 | -.0476 | -.1296 |
| | .6 | 0 | -.0136 | -.0271 | -.0407 | -.0543 | -.0678 | -.0814 | -.0950 | -.1085 | -.1221 | -.1356 | -.0681 | -.0006 | .0669 | .1345 | .2020 | .2695 | .1671 | .0646 | -.0379 | -.1403 |
| | .7 | 0 | -.0103 | -.0206 | -.0309 | -.0412 | -.0515 | -.0618 | -.0721 | -.0825 | -.0928 | -.1031 | -.0554 | -.0078 | .0398 | .0875 | .1351 | .1827 | .2304 | .1080 | -.0144 | -.1367 |
| | .8 | 0 | -.0067 | -.0133 | -.0200 | -.0266 | -.0333 | -.0400 | -.0466 | -.0533 | -.0600 | -.0666 | -.0374 | -.0083 | .0209 | .0501 | .0793 | .1085 | .1377 | .1669 | .0260 | -.1148 |
| | .9 | 0 | -.0031 | -.0062 | -.0092 | -.0123 | -.0154 | -.0185 | -.0215 | -.0246 | -.0277 | -.0308 | -.0178 | -.0047 | .0083 | .0213 | .0343 | .0474 | .0604 | .0734 | .0864 | -.0705 |
| C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| SPAN 3 | .1 | 0 | .0022 | .0044 | .0067 | .0089 | .0111 | .0133 | .0155 | .0178 | .0200 | .0222 | .0129 | .0037 | -.0056 | -.0149 | -.0242 | -.0334 | -.0427 | -.0520 | -.0613 | -.0705 |
| | .2 | 0 | .0036 | .0072 | .0108 | .0145 | .0181 | .0217 | .0253 | .0289 | .0325 | .0361 | .0210 | .0060 | -.0091 | -.0242 | -.0393 | -.0544 | -.0695 | -.0846 | -.0997 | -.1148 |
| | .3 | 0 | .0043 | .0086 | .0129 | .0172 | .0215 | .0258 | .0301 | .0344 | .0387 | .0430 | .0251 | .0071 | -.0109 | -.0289 | -.0468 | -.0648 | -.0828 | -.1008 | -.1187 | -.1367 |
| | .4 | 0 | .0044 | .0088 | .0133 | .0177 | .0221 | .0265 | .0309 | .0353 | .0398 | .0442 | .0257 | .0073 | -.0112 | -.0296 | -.0481 | -.0665 | -.0850 | -.1034 | -.1219 | -.1403 |
| | .5 | 0 | .0041 | .0082 | .0122 | .0163 | .0204 | .0245 | .0286 | .0326 | .0367 | .0408 | .0238 | .0067 | -.0103 | -.0274 | -.0444 | -.0614 | -.0785 | -.0955 | -.1126 | -.1296 |
| | .6 | 0 | .0034 | .0068 | .0102 | .0137 | .0171 | .0205 | .0239 | .0273 | .0307 | .0342 | .0199 | .0056 | -.0086 | -.0229 | -.0372 | -.0514 | -.0657 | -.0800 | -.0942 | -.1085 |
| | .7 | 0 | .0026 | .0051 | .0077 | .0102 | .0128 | .0153 | .0179 | .0204 | .0230 | .0255 | .0149 | .0042 | -.0065 | -.0171 | -.0278 | -.0384 | -.0491 | -.0597 | -.0704 | -.0810 |
| | .8 | 0 | .0016 | .0032 | .0048 | .0064 | .0080 | .0097 | .0113 | .0129 | .0145 | .0161 | .0094 | .0026 | -.0041 | -.0108 | -.0175 | -.0242 | -.0310 | -.0377 | -.0444 | -.0511 |
| | .9 | 0 | .0007 | .0014 | .0022 | .0029 | .0036 | .0043 | .0050 | .0057 | .0065 | .0072 | .0042 | .0012 | -.0018 | -.0048 | -.0078 | -.0108 | -.0138 | -.0168 | -.0198 | -.0228 |
| D | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| SPAN 4 | .1 | 0 | -.0003 | -.0006 | -.0009 | -.0012 | -.0015 | -.0018 | -.0021 | -.0024 | -.0027 | -.0030 | -.0017 | -.0005 | .0007 | .0020 | .0032 | .0045 | .0057 | .0069 | .0082 | .0094 |
| | .2 | 0 | -.0005 | -.0010 | -.0015 | -.0020 | -.0025 | -.0030 | -.0035 | -.0040 | -.0045 | -.0050 | -.0029 | -.0008 | .0013 | .0033 | .0054 | .0075 | .0096 | .0117 | .0137 | .0158 |
| | .3 | 0 | -.0006 | -.0012 | -.0019 | -.0025 | -.0031 | -.0037 | -.0043 | -.0049 | -.0056 | -.0062 | -.0036 | -.0010 | .0016 | .0041 | .0067 | .0093 | .0119 | .0145 | .0170 | .0196 |
| | .4 | 0 | -.0007 | -.0013 | -.0020 | -.0027 | -.0033 | -.0040 | -.0046 | -.0053 | -.0060 | -.0066 | -.0039 | -.0011 | .0017 | .0045 | .0072 | .0100 | .0128 | .0156 | .0183 | .0211 |
| | .5 | 0 | -.0006 | -.0013 | -.0019 | -.0026 | -.0032 | -.0039 | -.0045 | -.0052 | -.0058 | -.0065 | -.0038 | -.0011 | .0016 | .0044 | .0071 | .0098 | .0125 | .0152 | .0179 | .0206 |
| | .6 | 0 | -.0006 | -.0012 | -.0017 | -.0023 | -.0029 | -.0035 | -.0041 | -.0046 | -.0052 | -.0058 | -.0034 | -.0010 | .0015 | .0039 | .0063 | .0088 | .0112 | .0136 | .0160 | .0185 |
| | .7 | 0 | -.0005 | -.0009 | -.0014 | -.0019 | -.0024 | -.0028 | -.0033 | -.0038 | -.0042 | -.0047 | -.0027 | -.0008 | .0012 | .0032 | .0051 | .0071 | .0091 | .0111 | .0130 | .0150 |
| | .8 | 0 | -.0003 | -.0007 | -.0010 | -.0013 | -.0017 | -.0020 | -.0023 | -.0027 | -.0030 | -.0033 | -.0019 | -.0005 | .0008 | .0022 | .0036 | .0050 | .0064 | .0078 | .0092 | .0106 |
| | .9 | 0 | -.0002 | -.0003 | -.0005 | -.0007 | -.0009 | -.0010 | -.0012 | -.0014 | -.0015 | -.0017 | -.0010 | -.0003 | .0004 | .0011 | .0019 | .0026 | .0033 | .0040 | .0047 | .0054 |
| E | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| + Area | 0 | .0446 | .0791 | .1037 | .1182 | .1228 | .1174 | .1019 | .0765 | .0503 | .0462 | .0395 | .0683 | .1336 | .1822 | .2019 | .1927 | .1546 | .0887 | .0367 | .0275 | |
| - Area | 0 | -.0186 | -.0371 | -.0557 | -.0742 | -.0928 | -.1113 | -.1299 | -.1484 | -.1762 | -.2362 | -.1070 | -.0423 | -.0430 | -.0559 | -.0688 | -.0816 | -.0945 | -.1085 | -.1653 | -.2938 | |
| Total Area | 0 | .0260 | .0420 | .0480 | .0440 | .0300 | .0061 | -.0280 | -.0719 | -.1259 | -.1900 | -.0675 | .0260 | .0906 | .1263 | .1331 | .1111 | .0601 | -.0198 | -.1286 | -.2663 | |

TABLE A4.7



| Unit load at | REACTIONS/P | | | | | SHEARS/P | | | | | | | | |
|--------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------|
| | R _A | R _B | R _C | R _D | R _E | V _{AB} | V _{BA} | V _{BC} | V _{CB} | V _{CD} | V _{DC} | V _{DE} | V _{ED} | |
| SPAN 1 | A | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | .1 | .8800 | .1350 | -.0192 | .0059 | -.0017 | .8800 | -.1200 | .0150 | .0150 | -.0042 | -.0042 | .0017 | .0017 |
| | .2 | .7611 | .2680 | -.0372 | .0115 | -.0033 | .7611 | -.2389 | .0291 | .0291 | -.0082 | -.0082 | .0033 | .0033 |
| | .3 | .6447 | .3966 | -.0529 | .0163 | -.0047 | .6447 | -.3553 | .0413 | .0413 | -.0116 | -.0116 | .0047 | .0047 |
| | .4 | .5320 | .5189 | -.0652 | .0201 | -.0058 | .5320 | -.4680 | .0509 | .0509 | -.0143 | -.0143 | .0058 | .0058 |
| | .5 | .4241 | .6327 | -.0727 | .0224 | -.0065 | .4241 | -.5759 | .0568 | .0568 | -.0159 | -.0159 | .0065 | .0065 |
| | .6 | .3222 | .7359 | -.0745 | .0230 | -.0066 | .3222 | -.6778 | .0581 | .0581 | -.0163 | -.0163 | .0066 | .0066 |
| | .7 | .2277 | .8263 | -.0692 | .0213 | -.0062 | .2277 | -.7723 | .0541 | .0541 | -.0152 | -.0152 | .0062 | .0062 |
| | .8 | .1417 | .9019 | -.0558 | .0172 | -.0050 | .1417 | -.8583 | .0436 | .0436 | -.0122 | -.0122 | .0050 | .0050 |
| .9 | .0654 | .9605 | -.0332 | .0102 | -.0030 | .0654 | -.9346 | .0259 | .0259 | -.0073 | -.0073 | .0030 | .0030 | |
| SPAN 2 | B | 0 | 1.0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 1.0 | 0 | 0 | 0 | |
| | .1 | -.0843 | 1.0206 | .0814 | -.0248 | .0072 | -.0843 | -.0843 | .9362 | -.0638 | .0176 | .0176 | -.0072 | -.0072 |
| | .2 | -.1380 | .9892 | .1884 | -.0556 | .0161 | -.1380 | -.1390 | .8511 | -.1489 | .0395 | .0395 | -.0161 | -.0161 |
| | .3 | -.1656 | .9153 | .3129 | -.0882 | .0255 | -.1656 | -.1656 | .7497 | -.2503 | .0627 | .0627 | -.0255 | -.0255 |
| | .4 | -.1714 | .8083 | .4469 | -.1181 | .0342 | -.1714 | -.1714 | .6370 | -.3630 | .0839 | .0839 | -.0342 | -.0342 |
| | .5 | -.1599 | .6777 | .5824 | -.1410 | .0408 | -.1599 | -.1599 | .5178 | -.4822 | .1002 | .1002 | -.0408 | -.0408 |
| | .6 | -.1356 | .5329 | .7113 | -.1527 | .0442 | -.1356 | -.1356 | .3972 | -.6028 | .1085 | .1085 | -.0442 | -.0442 |
| | .7 | -.1031 | .3833 | .8255 | -.1488 | .0430 | -.1031 | -.1031 | .2802 | -.7198 | .1057 | .1057 | -.0430 | -.0430 |
| | .8 | -.0666 | .2383 | .9171 | -.1249 | .0361 | -.0666 | -.0666 | .1717 | -.8283 | .0888 | .0888 | -.0361 | -.0361 |
| .9 | -.0308 | .1074 | .9779 | -.0768 | .0222 | -.0308 | -.0308 | .0766 | -.9234 | .0546 | .0546 | -.0222 | -.0222 | |
| SPAN 3 | C | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | -1.0 | 0 | 0 | 0 | 0 | |
| | .1 | .0222 | -.0768 | .9779 | .1074 | -.0308 | .0222 | .0222 | -.0546 | -.0546 | .9234 | -.0766 | .0308 | .0308 |
| | .2 | .0361 | -.1249 | .9171 | .2383 | -.0666 | .0361 | .0361 | -.0888 | -.0888 | .8283 | -.1717 | .0666 | .0666 |
| | .3 | .0430 | -.1488 | .8255 | .3833 | -.1031 | .0430 | .0430 | -.1057 | -.1057 | .7198 | -.2802 | .1031 | .1031 |
| | .4 | .0442 | -.1527 | .7113 | .5329 | -.1356 | .0442 | .0442 | -.1085 | -.1085 | .6028 | -.3972 | .1356 | .1356 |
| | .5 | .0408 | -.1410 | .5824 | .6777 | -.1599 | .0408 | .0408 | -.1002 | -.1002 | .4822 | -.5178 | .1599 | .1599 |
| | .6 | .0342 | -.1181 | .4469 | .8083 | -.1714 | .0342 | .0342 | -.0839 | -.0839 | .3630 | -.6370 | .1714 | .1714 |
| | .7 | .0255 | -.0882 | .3129 | .9153 | -.1656 | .0255 | .0255 | -.0627 | -.0627 | .2503 | -.7497 | .1656 | .1656 |
| | .8 | .0161 | -.0556 | .1884 | .9892 | -.1380 | .0161 | .0161 | -.0395 | -.0395 | .1489 | -.8511 | .1380 | .1380 |
| .9 | .0072 | -.0248 | .0814 | 1.0206 | -.0843 | .0072 | .0072 | -.0176 | -.0176 | .0638 | -.9362 | .0843 | .0843 | |
| SPAN 4 | D | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | -1.0 | 0 | 0 | |
| | .1 | -.0030 | .0102 | -.0332 | .9605 | .0654 | -.0030 | -.0030 | .0073 | .0073 | -.0259 | -.0259 | .9346 | -.0654 |
| | .2 | -.0050 | .0172 | -.0558 | .9019 | .1417 | -.0050 | -.0050 | .0122 | .0122 | -.0436 | -.0436 | .8583 | -.1417 |
| | .3 | -.0062 | .0213 | -.0692 | .8263 | .2277 | -.0062 | -.0062 | .0152 | .0152 | -.0541 | -.0541 | .7723 | -.2277 |
| | .4 | -.0066 | .0230 | -.0745 | .7359 | .3222 | -.0066 | -.0066 | .0163 | .0163 | -.0581 | -.0581 | .6778 | -.3222 |
| | .5 | -.0065 | .0224 | -.0727 | .6327 | .4241 | -.0065 | -.0065 | .0159 | .0159 | -.0568 | -.0568 | .5759 | -.4241 |
| | .6 | -.0058 | .0201 | -.0652 | .5189 | .5320 | -.0058 | -.0058 | .0143 | .0143 | -.0509 | -.0509 | .4680 | -.5320 |
| | .7 | -.0047 | .0163 | -.0529 | .3966 | .6447 | -.0047 | -.0047 | .0116 | .0116 | -.0413 | -.0413 | .3553 | -.6447 |
| | .8 | -.0033 | .0115 | -.0372 | .2680 | .7611 | -.0033 | -.0033 | .0082 | .0082 | -.0291 | -.0291 | .2389 | -.7611 |
| .9 | -.0017 | .0059 | -.0192 | .1350 | .8800 | -.0017 | -.0017 | .0042 | .0042 | -.0150 | -.0150 | .1200 | -.8800 | |
| E | 0 | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -1.0 | |
| + Area | | .4956 | 1.6548 | 1.8868 | 1.6548 | .4956 | .4956 | .0462 | .9187 | .0485 | .9434 | .1136 | .7361 | .1855 |
| - Area | | -.1855 | -.1598 | -.0970 | -.1598 | -.1855 | -.1855 | -.7361 | -.1136 | -.9434 | -.0485 | -.9187 | -.0462 | -.4956 |
| Total Area | | .3101 | 1.4950 | 1.7898 | 1.4950 | .3101 | .3101 | -.6899 | .8051 | -.8949 | .8949 | -.8051 | .6899 | -.3101 |

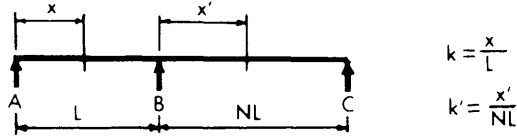
Influence coefficients — Four continuous spans.

L = Length of EXTERIOR spans; length of interior spans = NL.

N=1.7

TABLE 2S

Special points — Two continuous spans.



MAXIMUM MOMENT ORDINATES — SINGLE CONCENTRATED LOAD.

| N | in AB | | at B | | | | in BC | |
|-----|-------|-------|--------|-------|--------|-------|-------|-------|
| | M/PL | k | M/PL | k | M/PL | k' | M/PL | k' |
| 1.0 | .2074 | .4323 | -.0962 | .5774 | -.0962 | .4226 | .2074 | .5677 |
| 1.1 | .2092 | .4356 | -.0916 | .5774 | -.1109 | .4226 | .2262 | .5710 |
| 1.2 | .2109 | .4387 | -.0875 | .5774 | -.1260 | .4226 | .2448 | .5740 |
| 1.3 | .2125 | .4414 | -.0837 | .5774 | -.1414 | .4226 | .2634 | .5768 |
| 1.4 | .2139 | .4440 | -.0802 | .5774 | -.1572 | .4226 | .2817 | .5793 |
| 1.5 | .2152 | .4463 | -.0770 | .5774 | -.1733 | .4226 | .3000 | .5816 |
| 1.6 | .2164 | .4484 | -.0740 | .5774 | -.1894 | .4226 | .3182 | .5837 |
| 1.7 | .2176 | .4505 | -.0713 | .5774 | -.2060 | .4226 | .3364 | .5857 |

MAXIMUM POSITIVE MOMENT
UNIFORM LOADING.

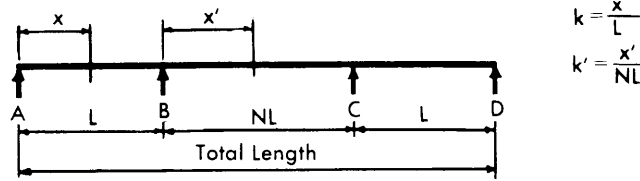
| N | in AB | | in BC | |
|-----|-------------------|-------|-------------------|-------|
| | M/wL ² | k | M/wL ² | k' |
| 1.0 | .0957 | .4375 | .0957 | .5625 |
| 1.1 | .0970 | .4405 | .1142 | .5655 |
| 1.2 | .0982 | .4432 | .1342 | .5682 |
| 1.3 | .0993 | .4457 | .1558 | .5707 |
| 1.4 | .1003 | .4479 | .1788 | .5729 |
| 1.5 | .1013 | .4500 | .2032 | .5750 |
| 1.6 | .1021 | .4519 | .2291 | .5769 |
| 1.7 | .1029 | .4537 | .2563 | .5787 |

MAXIMUM REACTION ORDINATES

| N | at B | |
|-----|--------|-------|
| | R/P | k' |
| 1.0 | 1.0000 | |
| 1.1 | 1.0015 | .0308 |
| 1.2 | 1.0057 | .0572 |
| 1.3 | 1.0119 | .0801 |
| 1.4 | 1.0197 | .1003 |
| 1.5 | 1.0289 | .1181 |
| 1.6 | 1.0392 | .1340 |
| 1.7 | 1.0505 | .1482 |

TABLE 3S

Special points — Three continuous spans.



MAXIMUM MOMENT ORDINATES — SINGLE CONCENTRATED LOAD.

| N | in AB | | at B | | | | in BC | |
|-----|-------|-------|--------|-------|--------|-------|-------|-------|
| | M/PL | k | M/PL | k | M/PL | k' | M/PL | k' |
| 1.0 | .2049 | .4277 | -.1026 | .5774 | -.0801 | .3837 | .1750 | .5000 |
| 1.1 | .2066 | .4308 | -.0984 | .5774 | -.0917 | .3815 | .1894 | .5000 |
| 1.2 | .2081 | .4336 | -.0945 | .5774 | -.1036 | .3796 | .2036 | .5000 |
| 1.3 | .2095 | .4362 | -.0909 | .5774 | -.1157 | .3777 | .2176 | .5000 |
| 1.4 | .2109 | .4386 | -.0876 | .5774 | -.1280 | .3761 | .2315 | .5000 |
| 1.5 | .2121 | .4408 | -.0846 | .5774 | -.1405 | .3745 | .2452 | .5000 |
| 1.6 | .2132 | .4428 | -.0818 | .5774 | -.1532 | .3730 | .2588 | .5000 |
| 1.7 | .2143 | .4447 | -.0791 | .5774 | -.1660 | .3717 | .2724 | .5000 |

MAXIMUM POSITIVE MOMENT
UNIFORM LOADING.

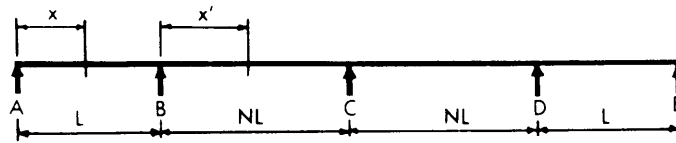
| N | in AB | | in BC | |
|-----|-------------------|-------|-------------------|-------|
| | M/wL ² | k | M/wL ² | k' |
| 1.0 | .1012 | .4500 | .0750 | .5000 |
| 1.1 | .1025 | .4528 | .0885 | .5000 |
| 1.2 | .1036 | .4554 | .1028 | .5000 |
| 1.3 | .1047 | .4576 | .1182 | .5000 |
| 1.4 | .1057 | .4597 | .1344 | .5000 |
| 1.5 | .1065 | .4615 | .1515 | .5000 |
| 1.6 | .1073 | .4632 | .1694 | .5000 |
| 1.7 | .1080 | .4648 | .1882 | .5000 |

MAXIMUM REACTION ORDINATES

| N | at B | | |
|-----|--------|-------|-------|
| | R/p | k | k' |
| 1.0 | 1.0057 | .9428 | |
| 1.1 | 1.0012 | .9816 | |
| 1.2 | 1.0000 | .9961 | |
| 1.3 | 1.0007 | | .0170 |
| 1.4 | 1.0030 | | .0348 |
| 1.5 | 1.0067 | | .0507 |
| 1.6 | 1.0116 | | .0649 |
| 1.7 | 1.0175 | | .0777 |

TABLE 4S

Special points — Four continuous spans.



$$k = \frac{x}{L}$$

$$k' = \frac{x'}{NL}$$

MAXIMUM MOMENT ORDINATES — SINGLE CONCENTRATED LOAD.

| N | in AB | | at B | | | | in BC | | at C | |
|-----|-------|-------|--------|-------|--------|-------|-------|-------|--------|-------|
| | M/PL | k | M/PL | k | M/PL | k' | M/PL | k' | M/PL | k' |
| 1.0 | .2047 | .4274 | -.1031 | .5774 | -.0790 | .3806 | .1730 | .4948 | -.0858 | .6164 |
| 1.1 | .2065 | .4307 | -.0985 | .5774 | -.0913 | .3805 | .1887 | .4982 | -.0938 | .6185 |
| 1.2 | .2082 | .4336 | -.0944 | .5774 | -.1040 | .3804 | .2042 | .5013 | -.1018 | .6205 |
| 1.3 | .2097 | .4365 | -.0906 | .5774 | -.1170 | .3803 | .2196 | .5043 | -.1097 | .6223 |
| 1.4 | .2111 | .4389 | -.0870 | .5774 | -.1303 | .3801 | .2349 | .5069 | -.1176 | .6240 |
| 1.5 | .2124 | .4413 | -.0838 | .5774 | -.1439 | .3801 | .2502 | .5093 | -.1254 | .6255 |
| 1.6 | .2137 | .4435 | -.0807 | .5774 | -.1577 | .3799 | .2654 | .5116 | -.1332 | .6270 |
| 1.7 | .2148 | .4457 | -.0779 | .5774 | -.1717 | .3798 | .2805 | .5136 | -.1409 | .6284 |

MAXIMUM POSITIVE MOMENT
UNIFORM LOADING.

| N | in AB | | in BC | |
|-----|-------------------|-------|-------------------|-------|
| | M/wL ² | k | M/wL ² | k' |
| 1.0 | .0996 | .4464 | .0805 | .5179 |
| 1.1 | .1025 | .4528 | .0944 | .5164 |
| 1.2 | .1055 | .4594 | .1095 | .5157 |
| 1.3 | .1086 | .4661 | .1258 | .5157 |
| 1.4 | .1119 | .4731 | .1432 | .5160 |
| 1.5 | .1154 | .4803 | .1618 | .5166 |
| 1.6 | .1190 | .4878 | .1815 | .5173 |
| 1.7 | .1228 | .4956 | .2024 | .5181 |

MAXIMUM REACTION ORDINATES

| N | at B | | |
|-----|--------|-------|-------|
| | R/p | k | k' |
| 1.0 | 1.0064 | .9399 | |
| 1.1 | 1.0016 | .9650 | |
| 1.2 | 1.0000 | .9949 | |
| 1.3 | 1.0009 | | .0183 |
| 1.4 | 1.0037 | | .0384 |
| 1.5 | 1.0082 | | .0566 |
| 1.6 | 1.0140 | | .0730 |
| 1.7 | 1.0210 | | .0873 |



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